Tees Maintenance Dredging Annual Review 2019

Client: PD Teesport

Reference: PC1115-RHD-ZZ-XX-RP-Z-001

Status: S0/P01.01

Date: 23 July 2020

Royal HaskoningDHV

Enhancing Society Together

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Open

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1 Introduction

1.1 Background

Maintenance Dredging and the Habitats Regulations 1994, A Conservation Assessment Protocol for England (referred to as 'the Protocol' hereafter) was published by the Department for Environment, Food and Rural Affairs (Defra) in 2007 and followed the draft Protocol issued in 2003 for pilot studies at three trial sites on the Humber, Medina and Fal/Helford. The protocol set out an approach for operators and regulators to provide a 'Maintenance Dredge Protocol (MDP) Baseline Document' to present existing and readily available information to describe the current and historical patterns of dredging in relation to the conservation objectives of a European site.

Where maintenance dredging is found likely to have, or be having, a significant effect on a European or Ramsar site, a port authorising or undertaking licensed, contracted or otherwise permitted maintenance dredging operations (including disposal) must exercise their functions in compliance with the requirements of the EC Habitats Directive (92/43/EEC) on the conservation of natural habitats and of wild flora and fauna (the Habitats Directive). The Protocol provides assistance to operators and regulators seeking, or giving, approval for maintenance dredging activities that could potentially affect European and Ramsar sites. Following this process enables issues associated with the Habitats Directive to be dealt with in a streamlined and proportionate manner, assisting harbour and port authorities in fulfilling their statutory obligations, and minimising the delay and cost to port and marine operators in obtaining consents.

The presumption in assessing any potential consequences of dredging activity is that maintenance dredging will continue in line with the established practice (described herein). The Baseline Document also presumes that existing practice is part of the functioning of the existing system.

The requirements of the Water Framework Directive (2000/60/EC) (WFD) extend further than the Habitats Directive, to consider the entire aquatic environment, rather than specific designated sites. However, aiming to achieve Good Ecological Potential / Status, which is required under the WFD, is also a key requirement for maintaining the designated sites in favourable condition; hence the requirements of the two Directives overlap.

The original Baseline Document was produced in 2005 (ABPmer, 2005). Royal Haskoning subsequently produced an updated Baseline Document in February 2008 (Royal Haskoning, 2008) which incorporated information which is relevant to the integrity of the European and Ramsar sites in the Tees estuary. Annual reviews and updates to the 2008 Baseline Document have been undertaken during:

- November 2009 (Royal Haskoning, 2009).
- February 2011 (Royal Haskoning, 2012a).
- March 2012 (Royal Haskoning, 2012b).
- February 2013 (Royal HaskoningDHV, 2013).
- May 2014 (Royal HaskoningDHV, 2014).
- February 2015 (Royal HaskoningDHV, 2015a).
- January 2016 (Royal HaskoningDHV, 2016).
- September 2017 (Royal HaskoningDHV, 2017).
- August 2018 (Royal HaskoningDHV, 2018).
- December 2019 (Royal HaskoningDHV, 2019).

1.2 Purpose of this document

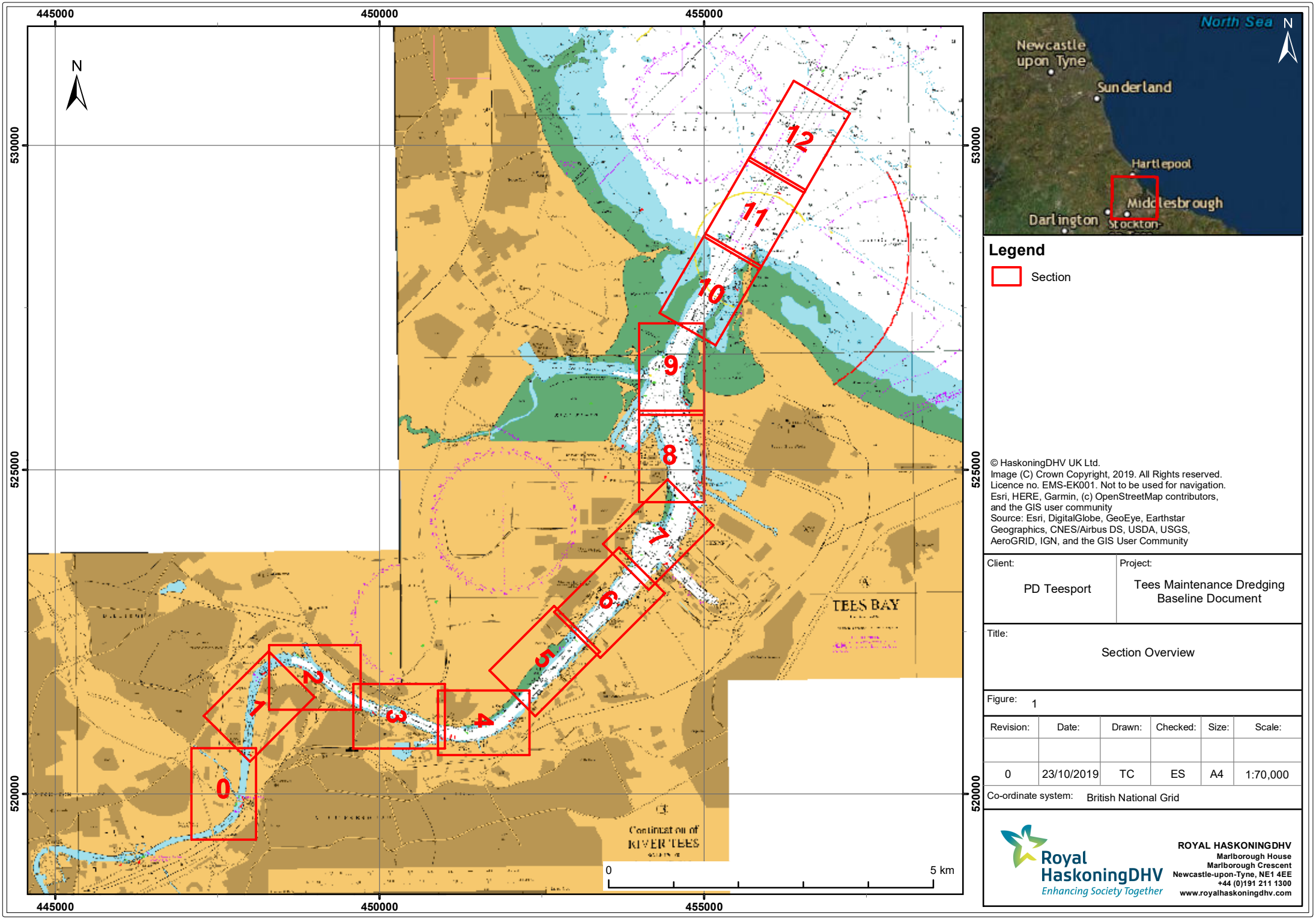
PDT has commissioned Royal HaskoningDHV to undertake a review of the 2018 MDP Baseline Document (Royal HaskoningDHV, 2019) to assess the impacts of maintenance dredging on relevant European and Ramsar sites and to ensure that maintenance dredging remains in compliance with the Habitats Directive. The findings of the review are presented in this report.

As a WFD compliance assessment was undertaken as part of the 2017 MDP Baseline Document update, an additional assessment has not been undertaken. However, a review of the previous WFD compliance assessment has been undertaken as part of this update.

As noted above, annual reviews and updates to the 2008 baseline document have been undertaken. It should be noted that the annual updates are on the reviews themselves, rather than the initial Baseline Document. The main headings of the review are self-explanatory; however, the sub-headings are intended to cover the various aspects of the Baseline Document that could potentially change. Any changes to conclusions and recommendations provided within the last annual update (as a result of any new information) are also presented.

1.3 Study area

The study area is defined as the area within which maintenance dredging is undertaken by PDT; that is, the area commencing 185m down-estuary of the Tees Barrage at Blue House Point to the seaward limit of the Port Authority Area. This area effectively includes all river frontage and facilities within the estuary commencing near the Tees Barrage (see Figure 1). The port facilities within Hartlepool Bay are also included in the study area. As shown on Figure 1, the study area in the Tees is subdivided into 13 sectors (Sector 0 to 12).



Legend

Section

Client:	Project:
PD Teesport	Tees Maintenance Dredging Baseline Document

Title: Section Overview

Figure: 1

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
0	23/10/2019	TC	ES	A4	1:70,000

Co-ordinate system: British National Grid

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2 Existing maintenance dredging regime

PDT has a statutory duty to maintain navigation within the Tees estuary and into the Hartlepool docks. As part of this responsibility, PDT must maintain the advertised dredge depths within the defined areas (hereafter referred to as “the maintained areas”). In order to achieve this, PDT carries out maintenance dredging in the reaches of the river shown in Figure 1, as well as at Hartlepool.

2.1 Dredge and disposal methods

Most dredging occurs in the approach channel and low-middle estuary in order to maintain access to berth pockets and impounded docks. Trailing Suction Hopper Dredgers (TSHD) are currently used for the majority of the dredging and are supported by plough dredging where required. PDT employs two TSHDs of 1,500m³ hopper volume to maintain depths within the navigable channel and berths within the Tees estuary and at Hartlepool. Both dredgers have active bottom door offloading systems.

PDT also operates its own 11m plough to supplement ongoing suction dredging operations through the removal of isolated high spots on the riverbed, primarily in frontages or confined areas. Plough dredging has also been utilised to move recently deposited accumulations of sediment to adjacent scour spots within the river, thus maintaining sediment within the estuarine system and reducing the overall volumes of dredgings requiring disposal to sea. Based on the above, in-contracted vessels are no longer required for maintenance dredging by PDT.

PDT operates its vessels under the requirements of the International Management Code for the Safe Operation of Ships and for Pollution Prevention (the ‘ISM’ code) which is then externally audited by the Maritime and Coastguard Agency. PDT’s operational activities are undertaken in compliance with an Environmental Management System (EMS) meeting ISO14001 requirements and the PD Ports Group Environmental Policy Statement (provided below).

The hopper dredger Heortnesse has been subject to a £2.5 million refurbishment which will extend its lifespan, improve dredge management and reduce emissions. Such dredge management and emission reduction systems are already utilised on other dredge vessels operated by PDT.

Dredging practices have remained unchanged during the period 2005 to 2019.

Royal HaskoningDHV

PD PORTS

GROUP ENVIRONMENTAL POLICY STATEMENT

PD Ports is an established ports and logistics business offering marine and port operations, warehousing, transport, forwarding and chartering throughout the UK.
We recognise environmental protection as one of our guiding principles and a key component of sound business performance; as such we have made the following commitments.

We will:

- Maintain our certification to ISO 14001 and operate as a minimum in compliance with all relevant legal requirements applicable to our business.
- Incorporate the consideration of potential environmental issues into our decision making and operations, including purchasing activities.
- Train, educate and inform our employees about environmental issues that may affect their work and promote environmental awareness to all those working on our sites.
- Ensure there are adequately trained personnel and suitable equipment available to respond immediately to any environmental / pollution incident and to regularly exercise contingency plans.
- Promote efficient use of resources and reduction of waste throughout our operations including electricity, fuel, raw materials, water and other resources, particularly those that are non-renewable, thereby reducing our carbon footprint.
- Work with our customers and suppliers to assess opportunities for the use of renewable and alternative energy sources.
- When dealing with any substances especially hazardous substances take all reasonable steps to prevent pollution during handling, transportation, storage and disposal, including developing procedures for dealing with emergencies and spill response in consultation with our neighbours and tenants as appropriate.
- To plan for changing environmental conditions through, amongst other measures, the development of a Climate Change Mitigation and Adaption Plan.
- Aim and work to minimise the impact of our activities on the local community and communicate proactively on the environment with interested parties, including customers, tenants, local residents and public authorities.
- Aim and work to minimise our impact on the ecology and the surrounding environment through the terrestrial and marine planning process.
- Undertake and regulate marine movements to minimise the impact on the surrounding environment and on other stakeholders
- Strive to continually improve our environmental performance by periodically reviewing our environmental objectives and targets in the light of new legislation and future plans.

Signature:

Frans Calje, Chief Executive Officer, PD Ports, Jan 2018

Issue: Final – Revision 2

Date: 16th July 2014 (DJ)

Revised: April 2017 (DJ)

STRETCH

2.2 Dredge volumes

A summary of dredged volumes (m³) from each reach from 2001 to 2019 is provided in Table 1. Data on dredging was obtained from PDT and extends the time series presented in Royal Haskoning (2008) from 2001 to 2019. As with previous years, no dredging has occurred in Reach 0 (Figure 1, and Figure A in Appendix 1) during the reporting period.

2.3 Disposal volumes

Table 1 and Figure 2 provide a summary of the total volume of dredged material (m³) disposed of to the Tees Bay offshore disposal site from each reach of the river shown in Figures A to M in Appendix 1. Other areas including Tees Berths, Hartlepool and the Seaton Channel are also shown in Table 1.

The total volume of maintenance dredged material disposal has decreased from 0.67 million m³ in 2018 to 0.54 million m³ in 2019. This is less than the average annual volume of maintenance dredged material disposal from the period 2001 to 2019, which equates to approximately 1.1 million m^3 per annum. Contributing factors to the reduction in volume of material requiring disposal offshore during 2019 are weather conditions and varied deposition rates within maintained areas.

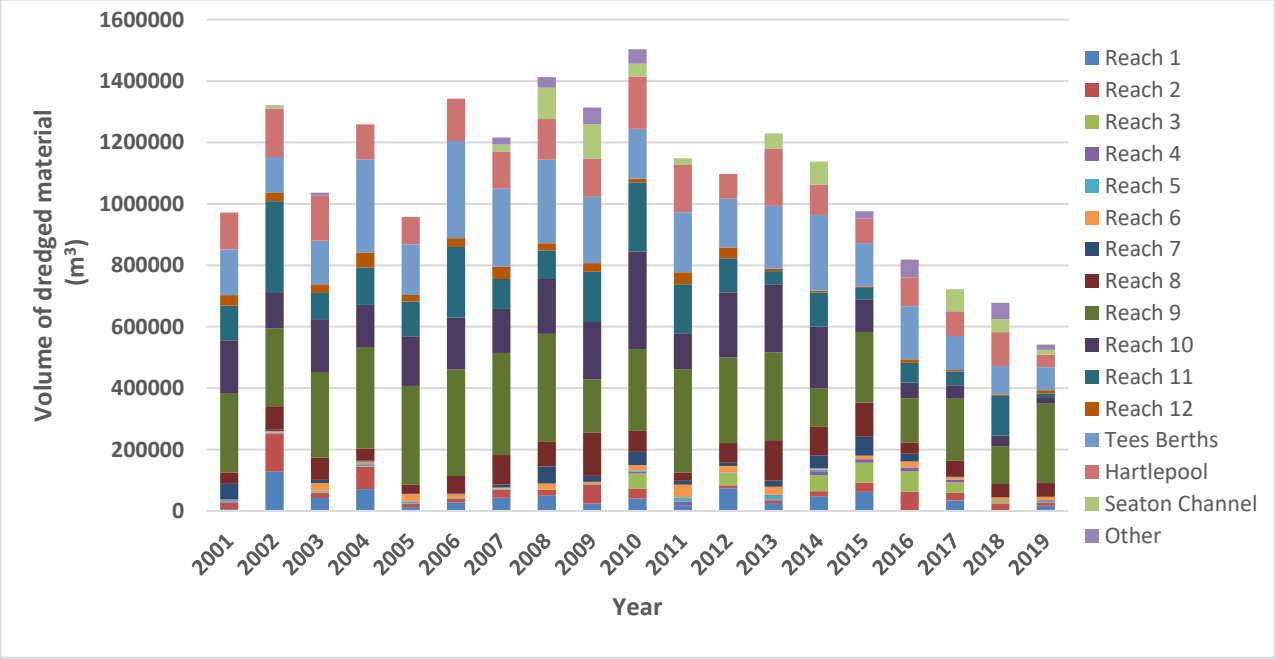

Figure 2 Summary of volumes (m^3) dredged and deposited offshore during the period 2001 to 2019

Table 1 Summary of the total volumes of dredged material disposal (m^3) from each reach of the River Tees (and Hartlepool) from 2001 to 2019

Reach	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1	5,911	127,827	42,384	70,856	12,361	27,075	42,701	49,701	24,159	40,237	19,066	73,544	25,674	48,268	62,094	1,500	33,972	2,165	16,509
2	21,768	122,381	16,470	73,210	11,649	12,982	26,028	19,805	60,118	32,817	371	9,814	8,863	15,894	29,830	61,722	25,133	22,508	11,379
3	0	1,366	4,176	3,205	412	412	1,925	735	1,772	48,532	0	37,429	0	52,857	64,998	65,468	33,698	8,501	1,693
4	3,131	1,666	127	4,468	676	282	1,514	0	274	6,056	11,386	1,500	2,996	12,504	11,770	12,884	8,771	1,879	2,605
5	4,621	1,634	2,751	3,815	5,997	1,339	764	0	1,336	4,745	13,496	2,541	15,018	5,370	471	951	0	0	3,270
6	1,625	5,282	24,645	4,859	23,640	12,092	3,088	18,906	7,037	17,009	41,303	21,755	26,210	3,630	10,534	18,383	8,242	8,624	10,618
7	51,303	4,804	10,765	3,297	1,243	2,642	9,841	55,084	19,322	43,157	12,502	10,160	19,746	42,200	61,866	25,041	3,339	0	0
8	37,075	76,297	72,261	39,251	30,172	56,926	96,160	82,531	140,839	68,357	27,102	64,468	131,948	93,188	111,145	37,485	50,317	44,138	44,965
9	256,158	252,715	279,054	330,835	321,316	347,365	332,679	349,982	174,009	266,187	336,050	278,883	286,441	124,821	230,316	143,677	202,051	121,796	258,315
10	174,248	118,613	171,950	137,022	161,349	168,733	143,089	178,819	186,336	317,961	117,635	211,799	221,176	201,953	106,326	51,239	44,053	36,072	21,132
11	112,437	296,471	85,385	121,807	113,304	230,099	97,682	92,427	163,910	225,143	159,529	110,787	43,032	110,777	36,893	64,146	44,546	129,283	12,204
12	34,747	28,437	28,156	48,707	21,307	28,262	39,441	23,548	27,937	12,133	38,877	35,415	7,662	5,954	4898	11,168	4,796	4,471	10,170
Tees berths	148,837	115,219	141,880	303,869	164,664	316,696	254,458	272,520	215,702	162,053	195,482	159,067	205,141	246,486	141,160	173,396	111,221	92,351	75,427
Hartlepool	119,847	157,329	146,457	114,104	89,811	137,606	121,605	132,041	125,032	170,170	154,025	80,410	186,229	99,068	79,818	92,781	79,936	110,448	39,943
Seaton Channel	0	10,900	0	0	0	0	22,279	102,463	111,424	42,110	21,060	0	49,598	74,652	0	0	71,803	41,712	15,951
Other	0	245	9,809	0	0	312	23,366	34,605	54,610	46,725	461	0	0	0	23,972	58,842	0	53,880	17,183
Total (x 10^6)	**0.972**	**1.32**	**1.03**	**1.259**	**0.958**	**1.343**	**1.217**	**1.413**	**1.314**	**1.503**	**1.148**	**1.098**	**1.230**	**1.13**	**0.97**	**0.81**	**0.71**	**0.67**	**0.54**

2.3.1 Dredge depths

PDT is required to publish dredge depths by the Tees and Hartlepool Port Authority Act 1966; the published Admiralty Charts show the maximum licensed depths for the channel and berths. A summary of the dredge depths is provided below.

The present main channel in the Tees has a declared depth of 15.4m below Chart Datum (bCD) in the approach channel (i.e. in Tees Bay), 14.1m bCD to upstream of Redcar Ore Terminal, 10.4m bCD up to Teesport and then progressively less depth up to 4.5m bCD in Billingham Reach.

Parts of the channel now declared at 14.1m bCD were originally dredged to a deeper depth. The declared depth of berths and docks varies depending on the location and the vessels which require access. The berth pocket within Tees Dock has been dredged to a depth of 14.5m bCD, with the general dock area dredged to 10.9m bCD.

The approach channel to Hartlepool Docks is currently maintained to 5.2m bCD. Victoria Dock is maintained to 6.8m bCD and the deep-water berths within the docks are maintained to 9.5m bCD.

Declared depths are required for navigational purposes, however actual dredge depths may be commonly up to 0.5m greater in depth given the tolerances associated with dredging practices.

PDT is proposing to deepen the Tees navigation channel and turning circle to a maximum depth of 14.5m bCD for the Northern Gateway Container Terminal (NGCT) project (detailed further in Section 5.1). PDT is also proposing to deepen, widen and realign the approach channel to Hartlepool Docks to a depth of 7.5m bCD as part of the consented Hartlepool approach channel project (Section 5.4).

3 Existing disposal strategy

3.1 Disposal protocol

The volume of dredged material requiring disposal from maintenance dredging operations must be recorded and provided to the Marine Management Organisation (MMO) and Cefas as a condition of the marine licence (L/2015/00427/4). It is often recommended that a disposal protocol be developed to manage this process. However, PDT considers that this document adequately addresses the requirement of any such protocol and, as such, PDT has not developed a separate protocol for this purpose. All relevant information regarding disposal procedures and practices (including any beneficial uses) is provided in the following sections.

3.2 Disposal locations and quantities

No changes have occurred to the location of the offshore disposal sites during the reporting period. The active disposal sites present in Tees Bay are summarised in Table 2. In general, Tees Bay A (TY160) is used for the disposal of maintenance dredge arisings while Tees Bay C (TY150) is used for capital dredge arisings (Figure 3). Tees Bay B (TY110) and Tees Bay Foreshore (TY170) are closed.

Table 2 Active disposal sites present in Tees Bay

Disposal site	Status	Description	Comment
Tees Bay A (TY160) Within the area bounded by joining the points: 54 40.800 N 01 03.500 W 54 41.500 N 01 02.200 W 54 41.000 N 01 00.300 W 54 40.200 N 01 01.500 W 54 40.800 N 01 03.500 W	Active	Active site for soft non-cohesive maintenance material	DEFRA records show volume fluctuating from 0.3 million to 2.4 million wet tonnes over a 15-year period. Volumes drop off post 1996. Largest volume deposited since 1996 was 1.8 million wet tonnes.
Tees Bay C (TY150) Within the area bounded by joining the points: 54 42.600N 00 58.600W 54 41.900N 00 57.400W 54 41.400N 00 58.700W 54 42.300N 00 59.900W 54 42.600N 00 58.600W	Active	Predominantly used for capital dredged material. Some maintenance dredging has been disposed of at this site.	DEFRA records show small scale usage. Peak volume deposited was 1.9 million wet tonnes in 1999, associated with the construction of the downstream Ro-Ro berths. Typical annual volume is 0.1 million wet tonnes. Some years show no usage at all.

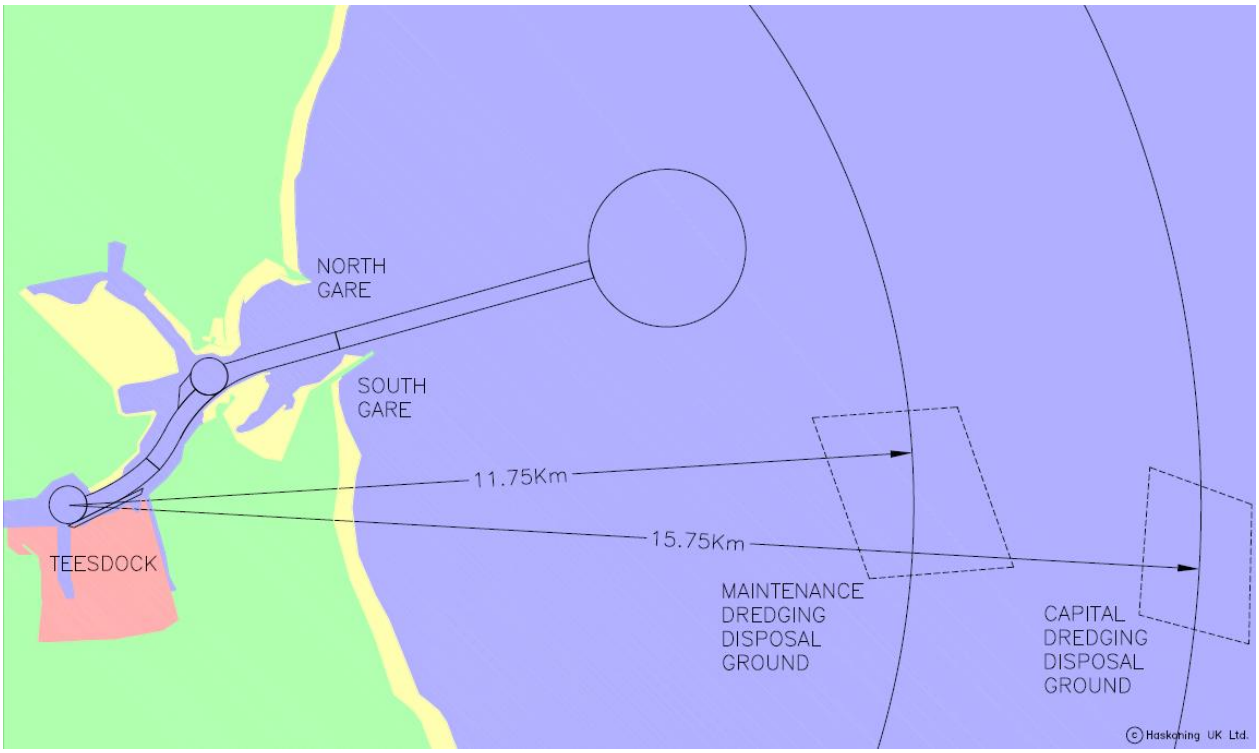

Figure 3 The location of dredging disposal grounds TY160 (maintenance material) and TY150 (capital material) and their distance (km) offshore from Tees Dock

3.3 Beneficial use of dredged material

Where suitable, a proportion of dredged arisings are proposed for alternative (beneficial) use within the estuary (alternative use considerations are a legal requirement of the marine licensing process for disposal of dredged material under the Waste Framework Directive).

PDT has made an agreement with a landfill operator on the banks of the Tees to provide an initial 6,000 tonnes of maintenance dredged silts; these silts are to be blended with contaminated fly ash to make a cementitious product which can be compacted for landfill. Other beneficial use measures are detailed below; these have been split into works which have been considered by PDT but not implemented, and works either detailed on consents or included as proposed works within marine licence applications.

3.3.1 Measures considered by PDT but not implemented

Regeneration of the North Tees mudflat using dredged material could be considered if it becomes evident that accretion of the mudflat is not occurring, following reinstatement of the half-tide embankment in 2010 (no requirement for use of material at this location is currently evident).

The use of geo-textiles is also being considered for the construction of 'bird islands' at Bran Sands to replace those lost over the past few years. Such proposals are still being investigated at a high-level and would be subject to consultation and regulatory approval prior to implementation.

A 'Mitigation and Beneficial Use' plan is being developed by PDT in conjunction with Natural England to consider and incorporate these and other potential beneficial uses within the estuary. Beneficial use and mitigation will be part of the Tees Estuary Partnership's remit which is addressing these items on a port-wide basis. There is the potential for the development of a 'habitat banking system' to be developed, which

would identify possible mitigation or beneficial use options within and around the Tees estuary, which developers could adopt (if required) to offset habitat loss. The enhancements may be funded through capital project mitigation/compensation but any provision of silts which these schemes may require could be supplied on the maintenance consent volumes. This Baseline Document will be updated to reflect the findings of these discussions as and when they are available.

3.3.2 Measures detailed within consents and included within marine licence applications

Sirius Minerals Harbour facilities

The Sirius Minerals Harbour facilities scheme includes a number of habitat enhancement measures within Bran Sands lagoon, designed to provide shallow water areas with intertidal fringes. The creation of this habitat would involve the placement of uncontaminated fine sediment (i.e. silt) from normal maintenance dredging operations on top of sands and gravels from capital dredging undertaken as part of the Sirius Minerals Harbour facilities scheme. This Baseline Document will be updated to reflect the actual works which are undertaken following progression of the construction works for this scheme.

Northern Gateway Container Terminal

The Tees River Trust (TRT) are considering potential habitat improvement opportunities to areas of currently degraded intertidal in the Newport Bridge area of the Tees. At a strategic level, the TRT is hoping to develop a habitat banking system that would enable various developers to utilise areas of habitat around Newport Bridge.

At a project level, PDT has held discussions with the TRT regarding the possible beneficial use of maintenance dredged material as part of habitat enhancement works within the Tees estuary in connection with the NGCT project.

The TRT has identified that there are opportunities to enhance currently degraded areas of intertidal on the east bank of the Tees, downstream of Newport Bridge, located approximately 10km upstream of the proposed NGCT footprint. The TRT is investigating the feasibility of habitat enhancement in a number of areas; the area being discussed between PDT and the TRT has a footprint of approximately 0.5ha, covering approximately 265m of intertidal.

The works proposed comprise the installation of a ‘green-wall’ in front of the existing retaining wall. The foreshore would be reprofiled and geotextile bags would be placed at the boundary of the existing intertidal. Maintenance dredged material, supplied by PDT, would then be pumped onto the intertidal.

The marine licence application submitted to the MMO in 2020 stated that should the timing of the proposed NGCT scheme and the proposed TRT scheme align, PDT would supply 6,000m^3 of maintenance dredged material to the TRT to allow habitat enhancement works to be undertaken. The marine licence application for the NGCT is currently being determined.

This Baseline Document will be updated in the future to reflect any progress on these beneficial use opportunities.

3.4 Mechanism of disposal

The mechanism for disposal during the reporting period has been for the dredger to steam out to Tees Bay A (TY160) and to release the dredged arisings over the disposal site via bottom door release (capital arisings from operations on the Tees are disposed of via a split hopper into site TY150).

Tees Bay A comprises 12 areas, as shown on Figure 4. These areas each receive dredged material during a certain month of the year, with the volume of disposed material varying during each month. PDT has undertaken bathymetric surveys which demonstrate the success of the managed disposal within each of the 12 areas. The current plan will be retained without changing areas and once CEFAS has carried out its survey of the area (e.g. for contamination), PDT may act on that data and amend the disposal plan.

Table 3 reports the average monthly disposal quantities from 2006 to 2019 and shows that the disposal of material is distributed throughout the disposal site, thus avoiding mounding of material at one location within the disposal site boundary.

Table 1 Average disposal quantity per month from 2006 to 2019

Month	Average disposal quantity (m^3)	Month	Average disposal quantity (m^3)
January	128,037	July	107,413
February	205,877	August	116,515
March	136,573	September	136,744
April	108,358	October	134,541
May	113,831	November	114,218
June	116,095	December	83,190

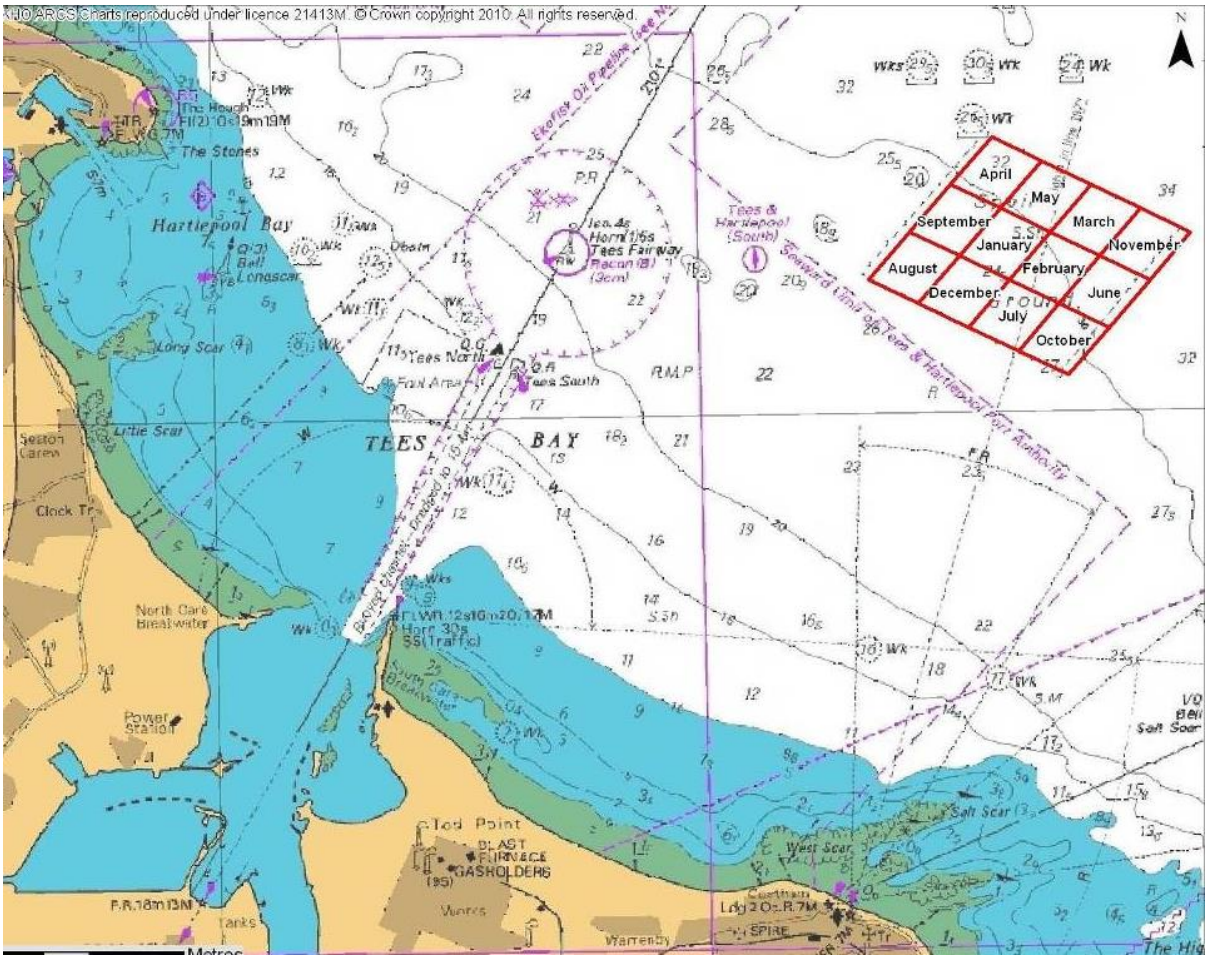

Figure 4 Tees Bay A disposal ground identifying disposal location by month

4 Consents and licences

4.1 Marine licences

Part 4 of the Marine and Coastal Access Act 2009 (MCAA) provides a framework for the licensing of activities below the level of Mean High Water Spring (MHWS) tides. The 'marine licensing' system has been in force since 6 April 2011. The MMO is the regulator for marine licensing in English inshore and offshore waters.

Since the Baseline Document was first produced, a number of licences have been issued under the marine licensing system and its predecessors (the 10-year marine licence held by PDT for the disposal to sea of maintenance dredgings (L/2015/00427/4) is of particular relevance to this document).

Marine licences which have been issued following the production of the Baseline Document are outlined below. The licences have been split into projects which have been completed and those which are currently uncompleted or have not started.

4.1.1 Completed projects

The following projects are considered complete as the licence end date has expired. If any aspects of the project works were not complete, a new licence would be required given that it is not possible to extend and expired licence.

- Licence 33195/06/0 granted 05/09/06 – 04/09/08 for 19,800 tonnes (Dawson`s North Sea Supply Base (completed 2009) and Teesside Cast Products (TCP) Heavy Lift Quay (completed 2008)). An application was submitted in 2011 to dredge to 8.5m below CD. This development is now complete with limited dredge works remaining.

- Licence 32880/06/01 granted 14/09/06 – 14/04/09 for 88,000 tonnes (Billingham Reach Wharf, Tees Dock Turning Circle, Tees Dock Water Area and Corporation Dock). This operation is now complete.

- Licence 32717/08/0 granted 21/05/2008 – 20/05/2009 for the disposal of up to 1,934,836 tonnes of capital dredgings from Seaton Channel, the Holding Basin and Quays 10/11 of the Able (UK) yard was made by Able (UK) Ltd. on 2 December 2004. The licence was approved in May 2008 for disposal at Tees Bay A (TY160) and Seaton Channel was dredged in October 2010.

- Licence 34371/10/0 granted 4 June 2010 for works commencing between 5 June 2010 and 31 October 2010 for the reconstruction of an approximately 150m length of half tide embankment in the River Tees. The reconstruction used 45m long sections of geotube filled with suitable dredged material. This work was completed in November 2010.

- Licence L/2011/00052/3 granted 1 June 2011 for works commencing between 1 June 2011 and 30 September 2012 for the disposal of dredged material (licensed quantity of 2,804,000 tonnes) from River Tees Channel, Berths and Frontages; Hartlepool Channel and docks and water area; and Seaton Channel basin and berths. The approved disposal site is Tees Bay A (TY160). This operation is now complete.

- Licence L/2011/00335/1 granted 21 December 2011 for works commencing between 1 January 2012 and 31 March 2013 for the placement of a rock mattress to support the spud legs from jack-up barges as part of the loading facilities for offshore wind construction in Hartlepool Docks. This work has been completed.

- Licence L/2014/00014 granted 29 January 2014 for works commencing between 1 April 2014 and 31 October 2014 to undertake refurbishment works to an existing jetty at Simon Storage. No dredging was required as part of the scheme. The work commenced and was completed during 2014.

- Licence L/2013/00217 granted 10 July 2013 for works commencing between 10 July 2013 and 31 March 2018 to undertake capital dredging and construction to improve the Tees Dock No.1 Quay. Work started in April 2014 and has been completed.

- The MMO approved a variation request to licence L/2013/00217 on 26 January 2017(L/2013/00217/7), for the dredging and disposal of an additional 15,000m^3 (33,000 wet tonnes) of material from within Tees Dock. The additional material to be removed is clay (geological material). As with the previous versions of the licence, the material will be disposed of within Tees Bay. This version of the licence supersedes all earlier version of this licence. The work has been completed.

- Licence L/2014/00227 Completion of Replacement Quay dredging- The aim of the project was to deepen the quay to allow larger vessels to berth. The end date on the licence is 3rd August 2015

- Licence L/2012/00361/3 Tees Transporter Bridge Enhancements - Stockton and Middlesbrough Councils are proposing various works to turn the Tees Transporter Bridge into a sub-regional and national visitor centre and tourist attraction. The application covers installation of permanent piles and pile cap. The end date of the licence is 31st December 2014.

- Licence L/2017/00066 Port Clarence Erosion Protection Works, Environment Agency. This project is needed to stabilise a river bank at Port Clarence, which has become subjected to erosion. This project is required to ensure the effectiveness of the recent flood protection scheme that was constructed at the site in 2015. The end date of the licence is 30th September 2017.

- Licence L/2017/00202 Middlehaven Dock Bridge Construction. Middlesbrough Council applied for a licence to install a three-lane vehicular bridge to replace the pedestrian footbridge at Middlehaven Dock. The licence end date was 30th September 2018.

- Licence L/2013/00155 Able Middlesbrough Port Berth 1 & 2, Able UK Ltd. The licence was to return the depth to previous level from average 6.3 metres to 7 metres. The end date on the licence was 14th May 2016.

- Licence L/2015/00233/2 Teesside Renewables Energy Plant – Surface Water Outfall, ECO2 Ltd As part of the Teesside Renewable Energy Plant at Port Clarence, Teesside, a new drainage outfall to the River Tees is required. The end date on the licence was 9th January 2016.

- Licence L/2017/00259 Installation of two piles and a pontoon at Normanby Wharf, Dockside Road Middlesbrough. The end date of the licence is 30th September 2019.

- Licence L/2017/00395 Sabic Dolphin Walkways 3 and 5 Maintenance of existing work, Sabic UK Petrochemicals Ltd. Dolphin structures 3 and 7 (at SABIC North Tees facility) require repair and general remediation. This will include the replacement of a gangway and the sleeving of 3 piles together with general maintenance. The licence end date is 19th October 2018.

- Licence L/2017/00395 Sabic Dolphin Walkways 3 and 7, Sabic UK Petrochemicals Ltd. Repair and general remediation of dolphin structures 3 and 7. Licence end date 19th October 2018.

- Licence L/2017/00194 Demolition and Site clearance of No 1 Jetty at Sabic Petrochemicals UK, North Tees Site, Sabic UK Petrochemicals Ltd. Demolition of SABIC North Tees No. 1 Jetty 1, which is no longer required for operational use at SABIC Quay. Licence end date is 31 December 2017.

- Licence L/2014/00166/3 Dismantling, Demolition of Redundant No. 1 Jetty at Sabic Petrochemicals UK . Jetty 1 is no longer required in order to undertake operations at SABIC quay, therefore this licence is for demolition of Jetty 1. The Licence end date is 31st August 2016.

- Licence L/2018/00179 North Tees Jetty 1A Replacement Ethylene Loading Arm Maintenance of existing works, Sabic Global ltd. The licence end date is 24th April 2019.

- Licence L/2013/00332/1 North Tees Site Jetty 2 embankment repair, Sabic UK Petrochemicals Ltd. The intention of this project is to arrest the decay of the embankment around the loading jetty and partially reprofile it. The licence end date is 14th December 2013.

- Licence L/2012/00094/1 SABIC Quay Marine Licence Application Jetty 3, Sabic UK Petrochemicals Ltd. Maintenance of two jetties at SABIC Quay and demolishment of Jetty 1. The licence end date is 29th March 2013.

- Licence L/2015/00226 Sabic Works at No.3 Jett North Tees, Sabic UK Petrochemicals Ltd. Works include upgraded fire protection system, dismantling and removal of jetty control buildings and construction of jetty impounding basin. The licence end date it 30th September 2016.

- Licence L/2013/00172/1 Tees Overhead Line Removal, National Grid Electricity Transmission PLC. The licence is for removal of the existing overhead line as a new line is required. The licence end date is 31st July 2016.

- Licence L/2013/00082 Environment Agency Intertidal Grab Sampling for Benthic Inverts and Contaminant, Environment Agency. A survey to assess the ecological status of the marine environment under the Water Framework Directive. The licence end date is 7th March 2014.

- Licence L/2013/00217 for the installation of a 30m floating pontoon to the newly refurbished Tees Dock No.1 Quay. The MMO approved a variation request to licence L/2013/00217 on 28 March 2018 (L/2013/00217/8), The MMO also granted permission to extend the expiry date of the licence from 31 March 2018 to 1 September 2018, to allow the pontoon installation works to take place.

- Licences 34376/09/0 and 34377/09/0 were both granted on 26 October 2009 for works commencing no sooner than 1 January 2010 to the end of the day of 31 December 2013, for deposits in the sea in connection with marine construction works associated with the proposed QEII berth development; and for the deposit of 42,000 tonnes (21,000m³) of capital dredged material (Mercia Mudstone constituent only) from the QEII berth, at disposal site Tees Bay C (TY150). A variation to extend both licences was requested on 20 November 2013, which was issued on 31 December 2013, and therefore licence L/2013/00403 now supersedes Licence 34376/09/0; and Licence L/2013/00404 now supersedes Licence 34377/09/0. Both licences have an end date of 31 December 2016. A subsequent change was then required to transfer the licence holder from PDT to MGT Teesside Limited. These varied licences were issued on 24 December 2014 (L/2013/00403/3 and L/2013/00404/3) (with an expiry date of 31 December 2016). Licence L/2013/00404/5 was granted on 27 May 2015 and expired on 31 December 2018.

- Licence 34963/11/0 granted 28 January 2011 for works commencing between 28 January 2011 and 27 January 2012 for the disposal of dredged material (licensed quantity of 3,496 tonnes) from South Bank, Wharves (TATA) on the River Tees. The approved disposal site is Tees Bay A (TY160). This work has not commenced.

- L/2019/00341 South Bank Wharf Site Investigation – Sampling, Able UK Ltd. A programme of sediment sampling was undertaken during 2019 to inform the environmental consenting process for a proposed new port facility at South Bank wharf. The licence end date is 31st December 2019.

4.1.2 Extant marine licences

The following marine licences are for works that are either incomplete or which have not yet started:

- Licence L/2012/00366 granted 28 September 2012 for works commencing between 1 October 2012 and 31 May 2015 for the disposal of dredged material (licensed quantity 2,889,700 tonnes) from River Tees Channel, Berths and Frontages; Hartlepool Channel and docks and water area; and Seaton Channel basin and berths. The approved disposal site is Tees Bay A (TY160). This marine licence has now been superseded by Licence L2015/00427/1. Licence L2015/00427/1 was granted 30 December 2015 for maintenance dredging disposal. This is a 10-year licence commencing from 1 January 2016.

- A deemed marine licence was included within the Sirius Minerals Harbour Facilities Order 2016, issued by the Secretary of State. The Order permits Sirius Minerals to carry out construction of a new quay, capital dredging and disposal and enhancement works in Bran Sands lagoon.

- L/2012/00116 Tees Crossing Overhead Power Line Scheme, National Grid Electricity Transmission PLC. The licence is for refurbishment the overhead line across the River Tees. A new overhead line route alignment was proposed. The licence end date is 15th April 2052.

- L/2019/00220 Inter Terminals – Jetty 1 upgrade, Inter Terminals Seal Sands Ltd. Top-side works to the existing infrastructure at Jetty 1 and Dolphin D, and a dredge of the riverbed (with associated disposal of dredged material) to extend the existing berth pocket downstream. The licence end date is 31st December 2022.

- L/2017/00012/4 Able Seaton Port Berths, Holding Basin and Channel – this licence replaced licence L/2012/00160/8. The objective of the works authorised by the licence (dredging to 6.5m CD with offshore disposal) is to improve access into Able Seaton Port. The licence end date is 1 March 2026.

- L/2019/00328/1 Hartlepool approach channel. PDT has a marine licence to undertake a programme of works within and adjacent to the existing approach channel into Victoria Harbour, located to the immediate south of Hartlepool Headland. The consented works comprise offshore disposal of capital dredged material (required to deepen, realign, widen and extend the length of the existing approach channel), as well as the construction of an underwater retaining wall adjacent to Middleton Breakwater. The marine licence end date is 15th September 2026.

4.2 Harbour Revision Orders

4.2.1 The Teesport Harbour Revision Order 2008

PDT obtained a Harbour Revision Order (HRO) for the NGCT in April 2008. The HRO, which came into force on 8 May 2008 for a period of 10 years, gave powers to dredge for the construction and maintenance of the NGCT development (see Section 4.1). A marine licence will be required for the construction works

and the disposal of dredged material to offshore disposal sites. PDT submitted a marine licence application for the proposed NGCT in February 2020; the application is still being determined.

PDT submitted an application to the MMO in January 2018 to extend the end date of the 2008 HRO for an addition 10 years. The MMO granted the extension and, therefore, the expiry date of the HRO is 7 May 2028.

5 Update on major proposed projects in the Tees estuary and at Hartlepool

This section updates the current status of the major consented and proposed projects in the maintained areas of the Tees estuary and at Hartlepool. Detail regarding the marine licences for each project is included in Section 4.

5.1 Northern Gateway Container Terminal

In April 2008, PDT applied for and received an HRO and outline planning permission for the NGCT. The HRO gave PDT the power to dredge for the purposes of 'construction and maintaining the works and affording access to the works by vessels from time to time to deepen, dredge, scour, cleanse, alter and improve the river bed, shores and channels in the vicinity of NGCT operations'. The marine elements of the NGCT project have not yet been implemented, and a marine licence will be required from the MMO prior to commencement of such works. An EIA has been undertaken to support the marine licence application, which was submitted to the MMO in February 2020.

The HRO expired on the 8th May 2018 (as the HRO was originally granted for a period of 10 years). PDT submitted an application to extend the expiry date of the HRO by an additional 10 years. The application was approved by the MMO in May 2018 and the expiry date of the HRO is now 7 May 2028.

Redcar and Cleveland Borough Council confirmed during December 2015 that development with regard to reference numbers R/2006/0433/OO, R/2012/0605/RM and R/2012/0764/RM (i.e. the reference numbers of planning permissions relating to NGCT) had formally commenced on site.

5.2 Sirius Minerals Harbour facilities

A Development Consent Order (DCO) for the Sirius Minerals Harbour facilities was granted in 2016. The scheme, designed to export polyhalite bulk fertiliser, will comprise the following elements:

- A port terminal on the southern bank of the Tees estuary (with a quay and deepening (dredging) of a section of the approach channel and to create a berth pocket).
- A conveyor system to transfer product to the port terminal from a Materials Handling Facility (MHF) at Wilton.
- Product storage facilities (surge bins) adjacent to the quay and ship loaders on the quay.
- Staff welfare and office facilities.
- Habitat enhancement measures in Bran Sands lagoon.

The scheme is to be implemented in two phases, with an increased volume of product to be exported during Phase 2.

The dredging required for the scheme will generate silts, sands, gravels, clay and rock. Some of the (uncontaminated) sand and gravel from the capital dredging during Phase 1 of the scheme will be used within Bran Sands lagoon as part of the habitat enhancement proposals. This will comprise the placement of dredged material within the lagoon to raise the bed level and provide a feeding habitat for waterbirds. A proportion of the capital dredged clay and mudstone will be used to create a series of islands in the lagoon to provide nesting and roosting areas for waterbirds.

The Sirius Minerals Harbour facilities Environmental Statement (ES) (Royal HaskoningDHV, 2015b) states that average infill rates into the deepened areas (created due to dredging for the Sirius Minerals Harbour facilities scheme) are predicted to be up to 5,900m^3 per year. However, this would not represent an additional 5,900m^3 of deposition a year (because there would be no effect on sediment transport into the estuary). The effect of the scheme will be a localised redistribution of (existing) sediment deposition, in response to predicted changes in current speeds. It is predicted that this very small change in the overall fine sediment regime will not alter the present frequency of, or methodology used for maintenance dredging and no effect on sediment supply to intertidal areas throughout the Tees estuary will occur.

The programme of works as presented within the DCO application stated that the minimum construction period for both Phase 1 and Phase 2 is 17 months. Phase 2 works are programmed to commence within six years of completion of Phase 1. Construction works for the Harbour facilities have not yet commenced and the commencement date is currently unknown.

5.3 Hartlepool approach channel

As noted above, PDT is proposing to undertake works to the Hartlepool approach channel, located to the immediate south of Hartlepool Headland. PDT is proposing to realign, widen, deepen and extend the length of the approach channel, to accommodate the needs of both the offshore wind industry and other existing customers. The proposed works will include the installation of an underwater retaining wall adjacent to Middleton Breakwater. PDT submitted a marine licence application in December 2018 and the licence was granted on 3rd October 2019 (L/2019/00328/1). Works have not yet commenced on this project.

5.4 South Bank Wharf

A substantial new port for the renewable energy sector, specifically offshore wind farm developments, is proposed within the Tees estuary at South Bank wharf. Information on the proposed scheme at South Bank wharf has been sourced from the Scoping Report (Prism Planning, 2019) issued to both the MMO and Redcar and Cleveland Borough Council in 2019. Further engineering design work is being undertaken and therefore the information below is subject to change.

There is a requirement to bring the component parts of offshore wind farms manufactured at different locations to a construction port close to their offshore point of installation. The South Bank wharf site provides on optimal location for a number of offshore projects currently proposed in the North Sea. The use of the port will include heavy load operations and handling of the various elements that comprise an offshore wind turbine.

To enable vessel access to the operational quay and allow berthing alongside its length over a commercially viable tidal range, capital dredging will be required from three distinct areas.

- Berthing Pocket: The quay will have a dredged berthing pocket that will be maintained up to 12.5 m bCD. The berthing pocket will be 70m wide.
- Approach Channel: The existing river channel is dredged to 14.1m bCD. From Norsea Oil Terminal (2.7km downstream) the dredged level reduces in steps to a minimum depth 5.7 m bCD at the downstream end of the development site. The channel will be reduced to 12.5m bCD from the Norsea Oil Terminal over approximately 3.5km in order to provide a maintained depth of 12m bCD.
- Turning Area: A Turning Circle is located outside of Tees Dock. This is partly dredged to 10.4 m bCD, and partly to 8.8 m bCD. Due to the narrowness of the river at the proposed new quay, vessels will need to utilise this facility and the shallow section will need to be deepened to 12.5m bCD and maintained at 12.0m bCD.

The proposed dredge area overlaps to a large extent with the area proposed to be dredged for the NGCT. The capital dredge for the project would be 2.5Mm^3 (gross) or 1.6 Mm^3 if carried in conjunction with the NGCT project.

As stated in Section 4.1.2, a marine licence was granted for the survey works undertaken to inform the design and environmental consenting process. Applications for planning permission or a marine licence have not been submitted for the proposed scheme at South Bank wharf to date.

As the project is at an early stage and has not been consented (as no application has been submitted), details could change or be refined and consent may not be granted. Therefore, it is currently unclear what the implications of the project would be on PDT's maintenance dredging. However, if consented, this project would need to be reviewed in a future update to this document.

6 New environmental information

6.1 Designated sites

6.1.1 Teesmouth and Cleveland Coast SPA and Ramsar site

The 2018 update presented details of the amendments that were, at the time of that update, proposed to the boundaries and interest features of the Teesmouth and Cleveland Coast SPA and Ramsar site (i.e. the 2018 update detailed the boundary and interest features of the Teesmouth and Cleveland Coast potential SPA (pSPA) and Ramsar site). The proposed changes to these sites were classified on the 16th January 2020. As the changes to the boundaries and interest features of these sites were fully documented within the 2018 update and there have not been subsequent changes, it is not considered necessary to repeat the information within this update.

6.1.2 Sites of Special Scientific Interest

As well as detailing proposed amendments to the Teesmouth and Cleveland Coast SPA and Ramsar site, the 2018 update presented details of notified amendments to the existing SSSIs around the Teesmouth and Cleveland Coast. As the changes to the SSSIs were fully reported in the 2018 update, it is not considered necessary to repeat the information within this update.

6.1.3 Memorandum of Understanding for the Teesmouth and Cleveland Coast Special Protection Area and proposed extension

The Tees Estuary Partnership (TEP) was formed in 2016, and is made up of businesses, industry, regulators, local government and environmental organisations. One of the aspirations of the TEP was for regulators to set out a 'Memorandum of Understanding' (MoU) for the Tees estuary.

The MoU (principles document) was produced in October 2017, and has been signed by the MMO, Environment Agency and Natural England. As well as protecting and enhancing the nature conservation sites along the Teesmouth and Cleveland coast, the MoU is intended to make it easier for developers and businesses to navigate through the regulatory framework in a number of ways, including:

- Providing a single point of entry – pointing applicants to other bodies as relevant and in some cases proactively informing other MoU signatories or consenting bodies that an application or an advice request has been received.
- One lead authority – aiming to reduce the duplication of evidence requirements and to streamline regulatory processes around Environmental Impact Assessments and Habitats Regulations Assessments.
- Dispensing with, or deferring regulatory responsibilities – exploring the legal options available for streamlining within the regulatory process.
- Certainty on evidence requirements – identifying common evidence needs, enabling parallel tracking of work to satisfy evidence requirements, and assessing the level of support that could be provided to proactively fill strategic gaps in evidence.
- Co-ordination of advice – providing coordinated advice between organisations within agreed timescales.

The second part of the TEP's vision for the Tees seeks ambitious outcomes for nature conservation, exploring the development of a habitat banking system which will facilitate a wide range of environmental projects and simultaneously enable future developments on the estuary.

6.2 Sediment quality data

The 2018 update presented sediment quality data from a number of surveys undertaken in the Tees estuary and at Hartlepool since the 2017 update, namely:

- Sampling to comply with the mid-licence conditions on the maintenance dredge disposal licence from Hartlepool and the Tees estuary.
- NGCT (Tees estuary).
- Teesside GasPort (Tees estuary).
- Hartlepool approach channel (Hartlepool).
- Inter Terminals Jetty 1 refurbishment (Tees estuary).

Able UK carried out a sediment quality survey within the Tees estuary during 2019 for the proposed South Bank wharf scheme, however the data is not publicly available and therefore is not available for inclusion within this report. A further sediment quality survey is planned for the proposed South Bank wharf project during 2020; this information, assuming it becomes publicly available, will be included in a future annual update to this report.

Condition 5.2.3 of PDTs maintenance dredge and disposal licence specifies that:

"a regime of future sediment sampling is undertaken by PDT, of at least three yearly intervals, which must be agreed in advance with the MMO. Samples must be collected, analysed and the report of their notification signed off prior to dredging in the fourth and subsequently the seventh and tenth year of this licence".

Condition 5.2.3 has been met in part by the recovery of samples for analysis prior to dredging in the fourth year. However, additional sampling will be required in the seventh and tenth year of the licence; such data will be reported within subsequent updates to this report, as the data becomes available.

7 Assessment of impacts in relation to designated sites

An assessment of the potential effects of PDT's existing maintenance dredge regime on designated sites was undertaken as part of the 2018 update. This was undertaken to determine whether PDT is fulfilling its statutory obligations with regard to the Protocol, specifically to determine if the maintenance dredging activity is causing a significant effect on designated sites (namely the (at the time) Teesmouth and Cleveland Coast pSPA and Ramsar site). The assessment detailed in the 2018 update concluded that:

"Existing maintenance dredging activity does not appear to be having, or has historically had, an impact on the existing designated sites. If existing practices are continued, maintenance dredging activities will not affect the current and proposed designated sites, as the maintenance dredging forms a long-established part of the overall existing estuary regime. A significant change from present dredging practice would, however, warrant a review of this conclusion because of the potential for this to represent a change from the present situation."

There has been no changes to the designated sites since the 2018 update, other than to formalise the proposed changes which have been previously documented and assessed (in the 2018 update). No further environmental survey information is available since production of the 2018 update and there have been no material changes to the disposal practices.

8 Changes to previous recommendations

The assessment of potential effects of maintenance dredging on the Teesmouth and Cleveland Coast SPA and Ramsar site was originally presented in Section 5 of the Baseline Document (Royal Haskoning, 2008). The 2008 Baseline Document concluded that the existing maintenance dredging activity being undertaken in the study area does not appear to be having, or has historically had, an impact on the European sites which would alter their condition. No mitigation measures were relied on within the 2008 Baseline Document to come to the conclusions made.

The 2018 update presented the findings of further impact assessment undertaken to assess the potential effects of maintenance dredging on the Teesmouth and Cleveland Coast pSPA and Ramsar site, and the Teesmouth and Cleveland Coast SSSI. The assessment was undertaken using the most recent maintenance dredging information and sediment quality data. The updated impact assessment in the 2018 report indicated that the conclusions reached in the 2008 Baseline Document remain valid.

The 2008 Baseline Document recommended that the conclusions must be reviewed if a significant change in maintenance dredging practices should occur as a result of new developments. As noted in Section 5 and 7, there have been no material changes to the existing environment since production of the 2018 update, and no further sediment quality data is available. There have been no material changes to the dredging or disposal practices since 2018. There have been no significant schemes within the Tees estuary or Hartlepool which have been implemented since the 2018 update which could impact on the ongoing maintenance dredge practices. On this basis, the conclusions of the 2018 update remain valid.

In addition to the above, it is concluded that the outcomes of the WFD compliance assessment conducted in the 2017 update remain valid, as no further sediment quality survey data is available since the 2018 update. The WFD compliance assessment concluded that maintenance dredging is not causing a reduction in status or jeopardising the WFD water bodies screened into the assessment from meeting their objectives.

9 References

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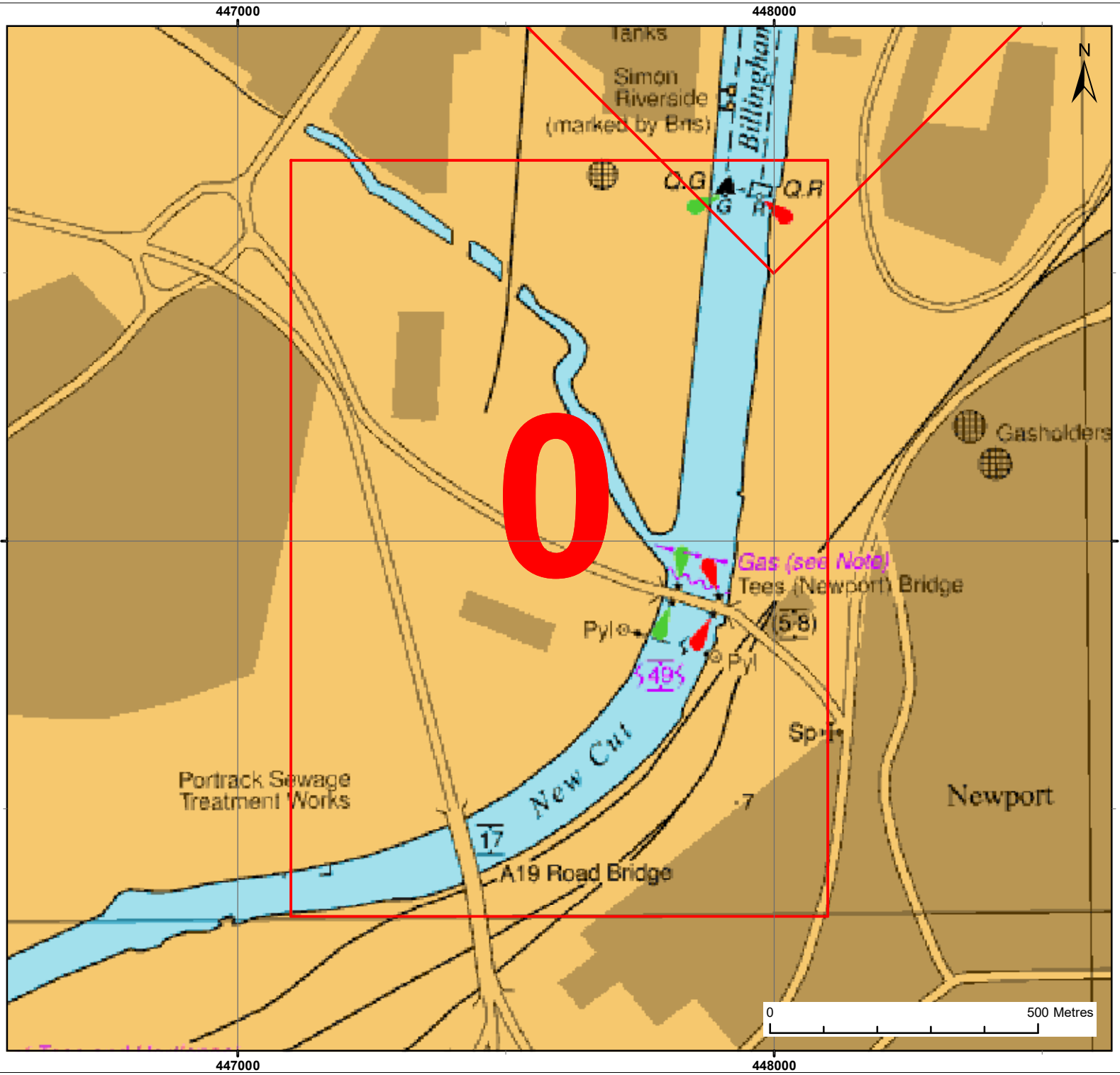
Appendix 1

Dredge areas and volumes

Royal HaskoningDHV
Enhancing Society Together



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PD Teesport	Tees Maintenance Dredging Baseline Document

Title: Section 0

Figure: A

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Co-ordinate system: British National Grid

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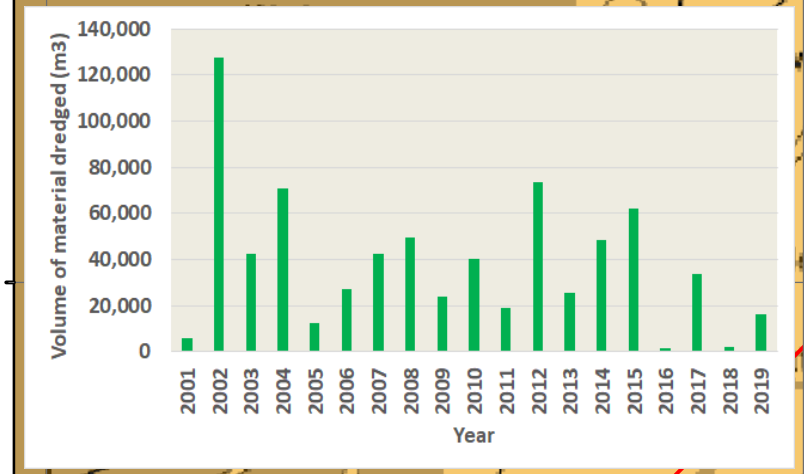

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Slips

Q(2)G.5s
No 37

Outfall

Barnard's Bight

Q(2)R.5s
No 36-A

Q.R
No 38

North
Supply

Able UK
Ltd

Able
Wharf
(BRIE)

Riverside
Park

Dredged to 4.5m

Billingham Reach

Tanks

Simon
Riverside
(marked by Bns)

Q.G

Q.R

0 500 Metres

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Title: Reach 1

Figure: B

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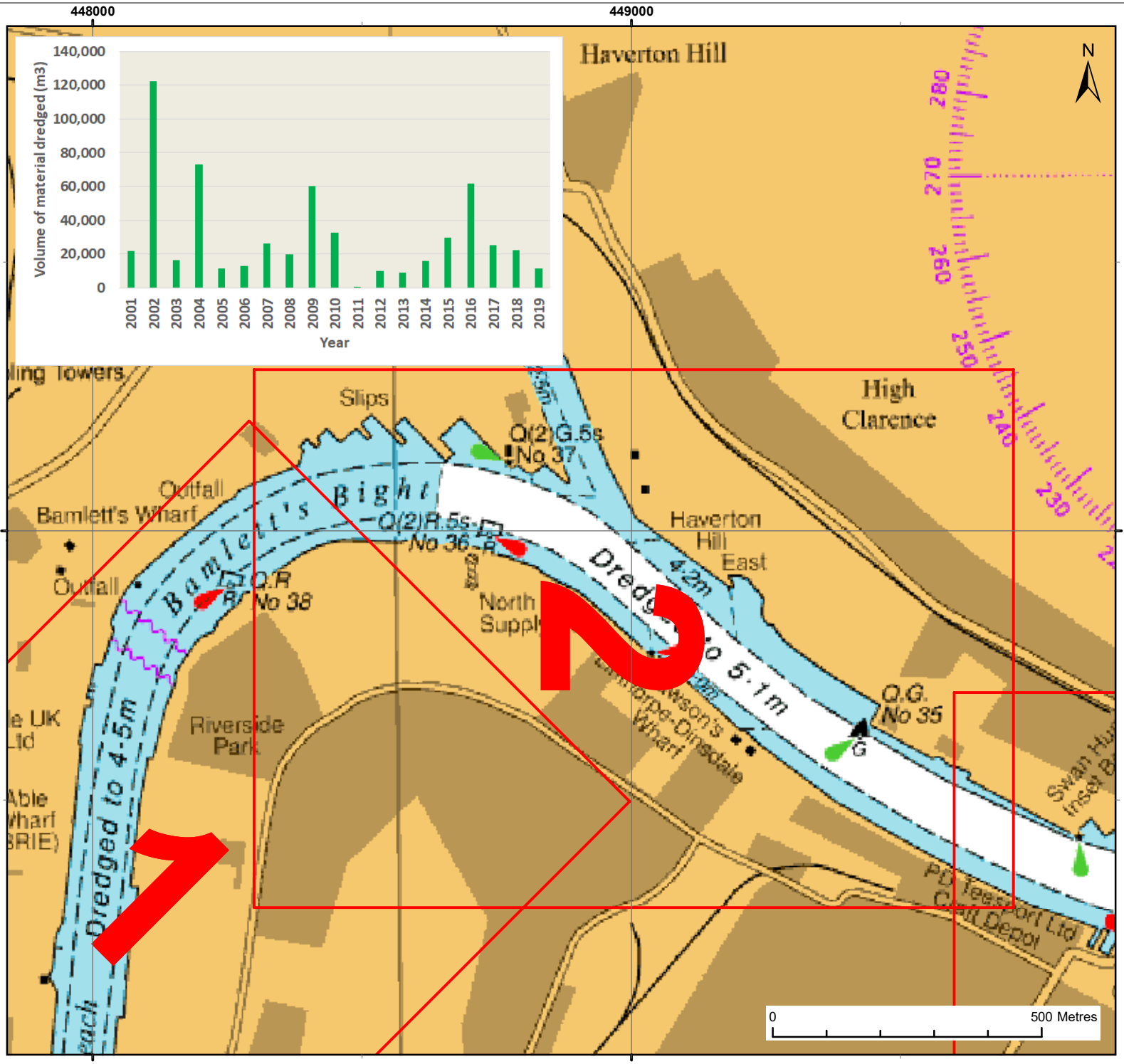

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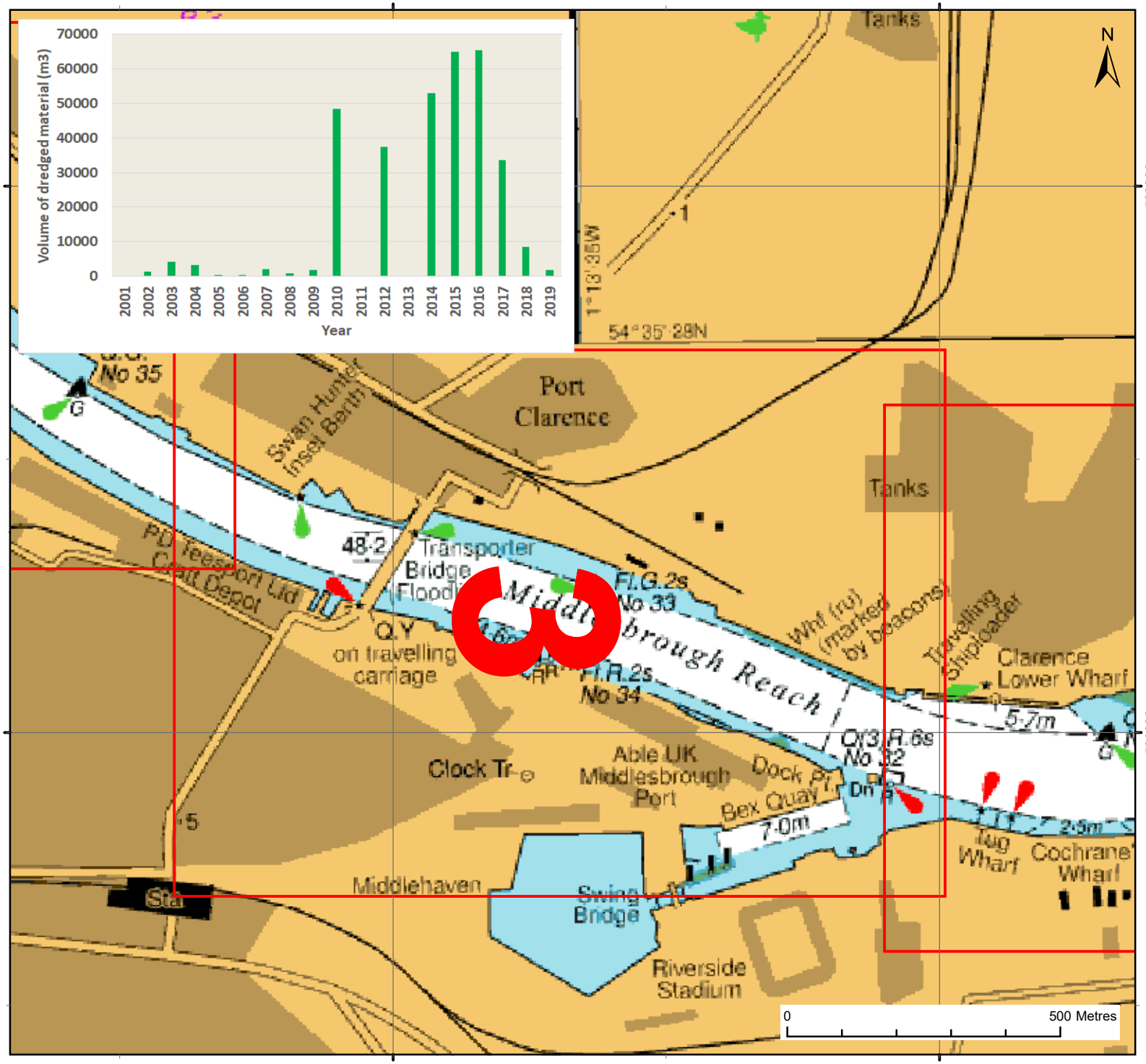

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Co-ordinate system: British National Grid

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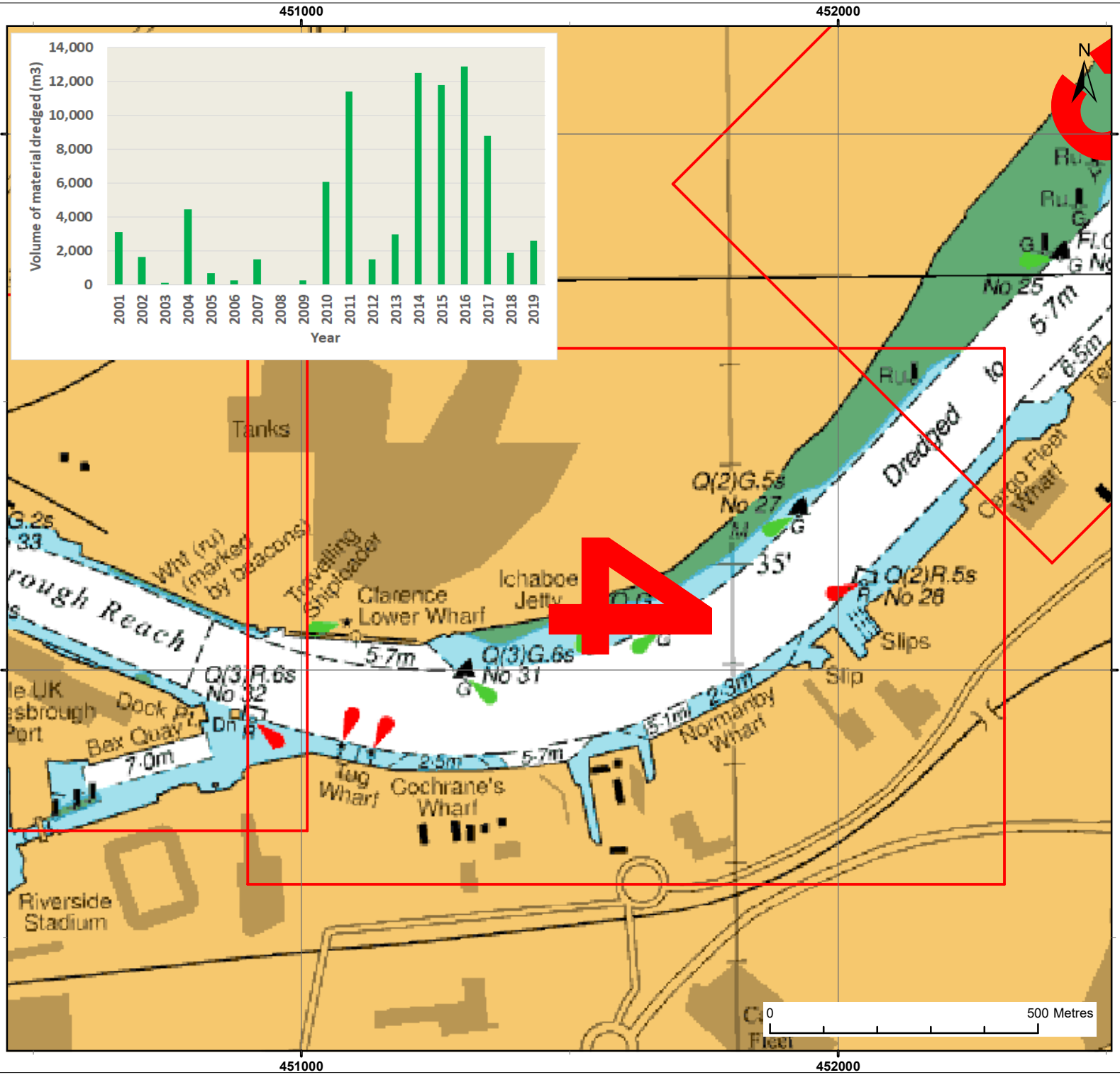

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Section

Client:	Project:
PD Teesport	Tees Maintenance Dredging Baseline Document

Title: Reach 4

Figure: E

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
0	01/04/2020	TC	ES	A4	1:10,000

Co-ordinate system: British National Grid

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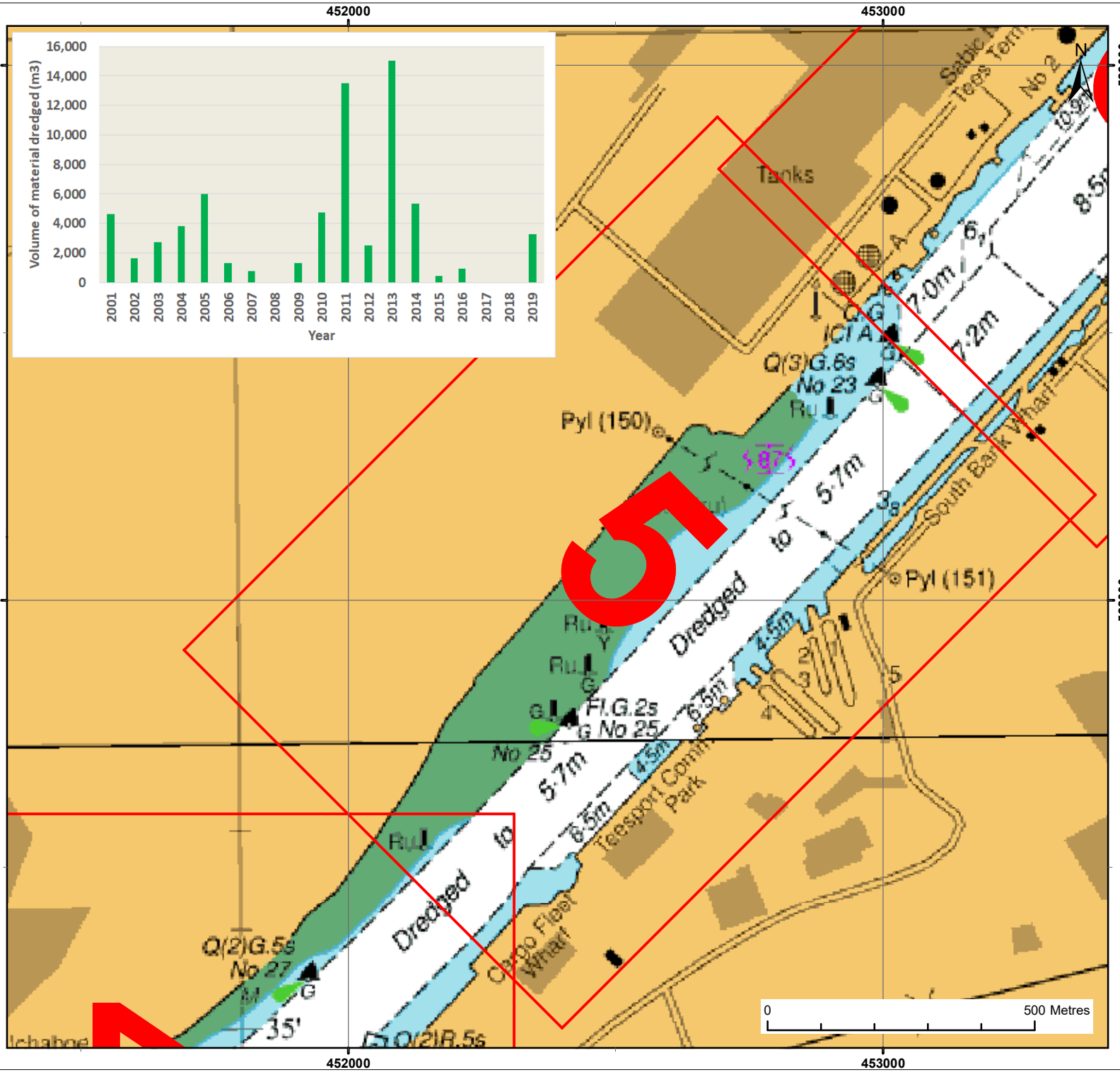

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Section

Client:	Project:
PD Teesport	Tees Maintenance Dredging Baseline Document

Title: Reach 5

Figure: F

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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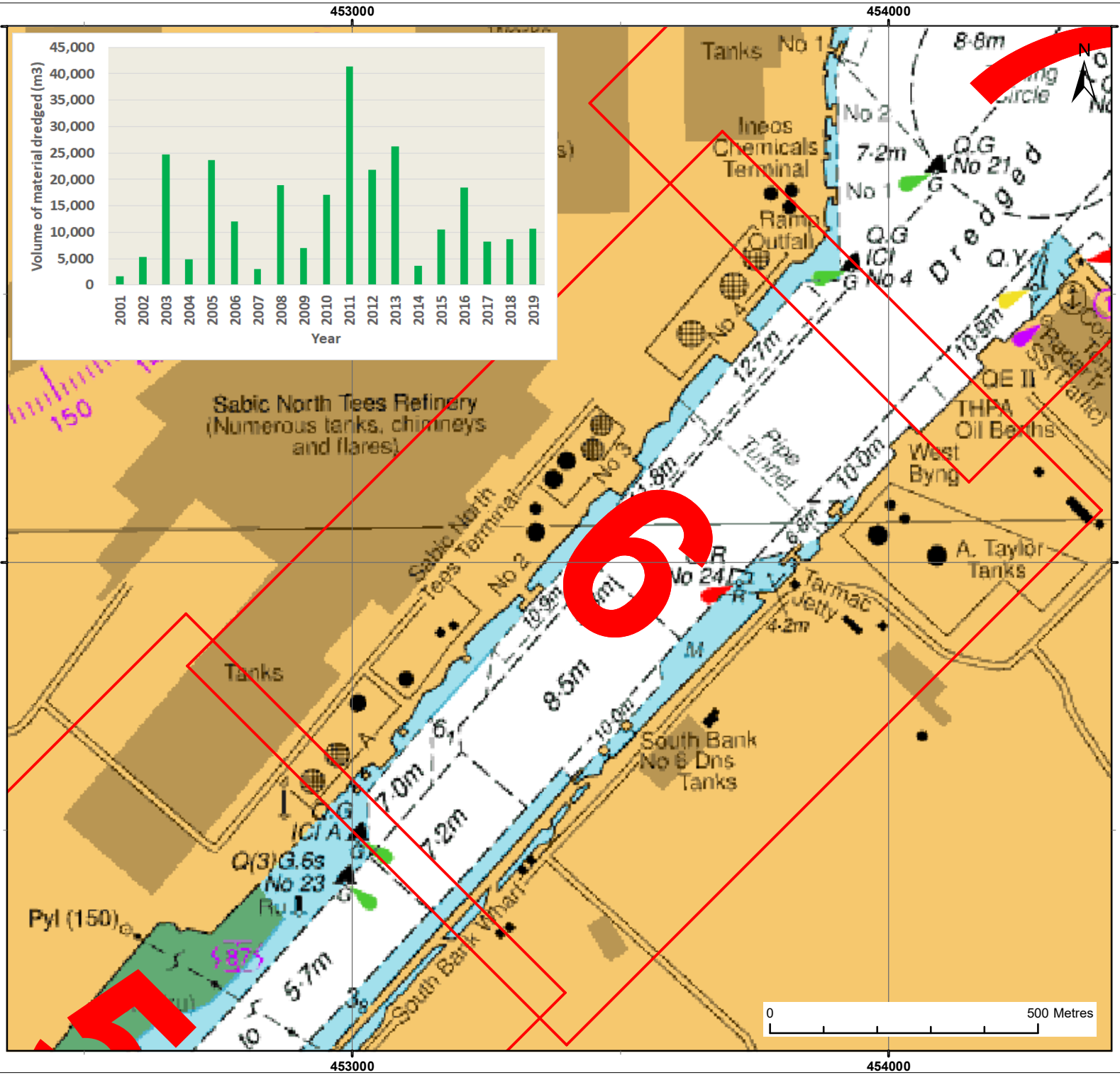

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Section

Client:	Project:
PD Teesport	Tees Maintenance Dredging Baseline Document

Title: Reach 6

Figure: G

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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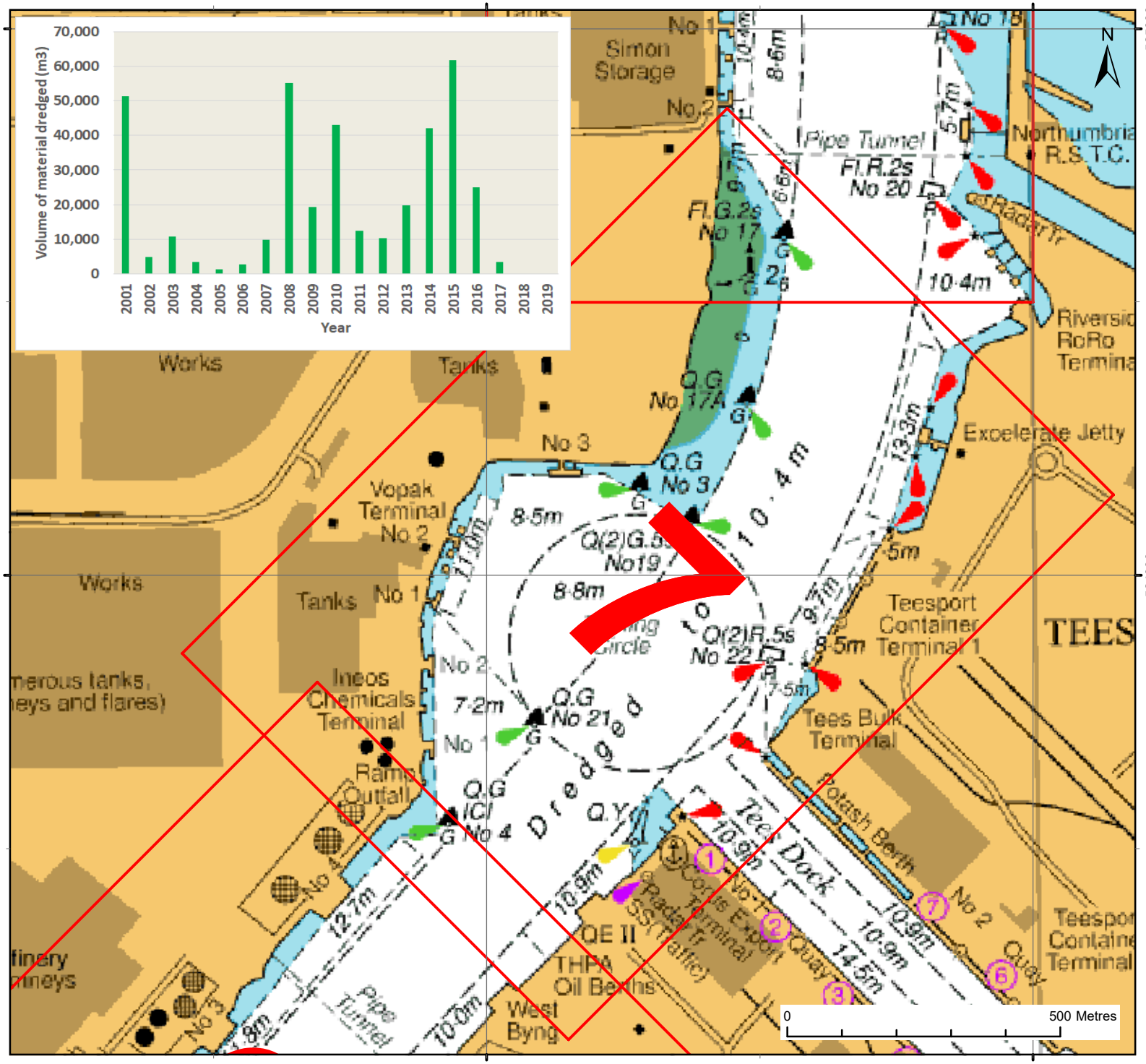

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Section

Client:	Project:
PD Teesport	Tees Maintenance Dredging Baseline Document

Title: Reach 7

Figure: H

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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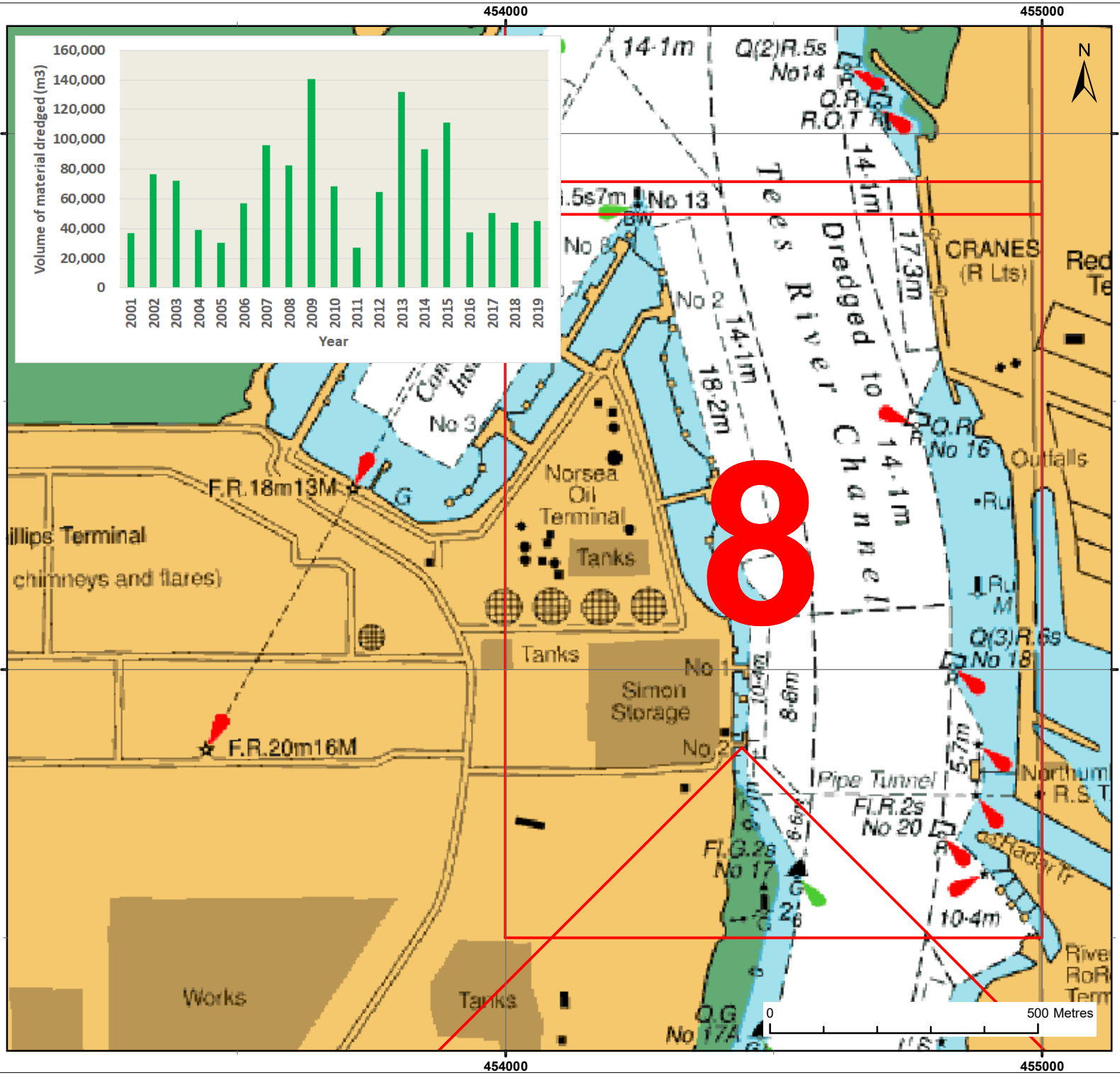

Legend

Section

Client:	Project:
PD Teesport	Tees Maintenance Dredging Baseline Document

Title: Reach 8

Figure: I

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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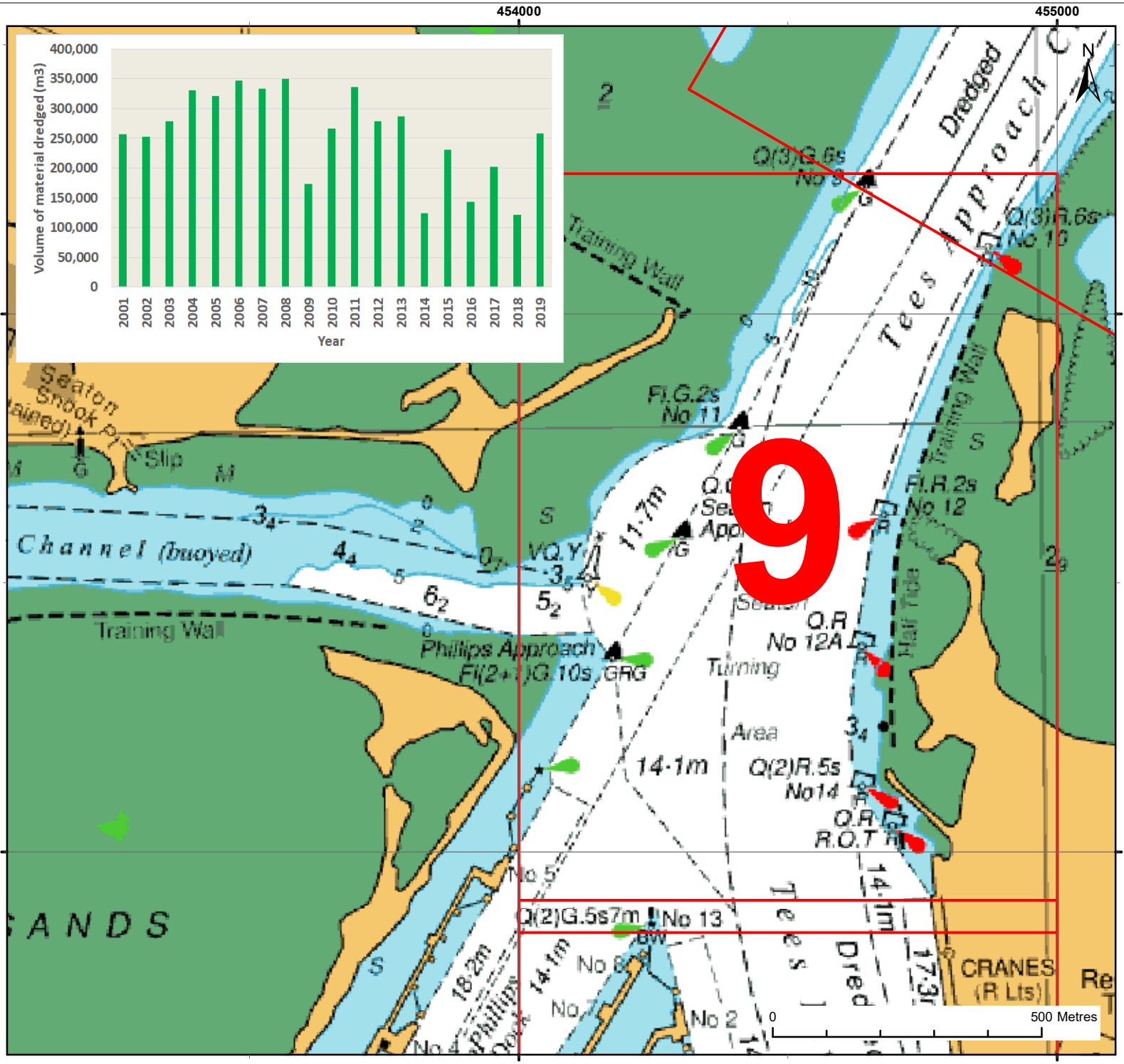

Legend

Section

Client:	Project:
PD Teesport	Tees Maintenance Dredging Baseline Document

Title: Reach 9

Figure: J

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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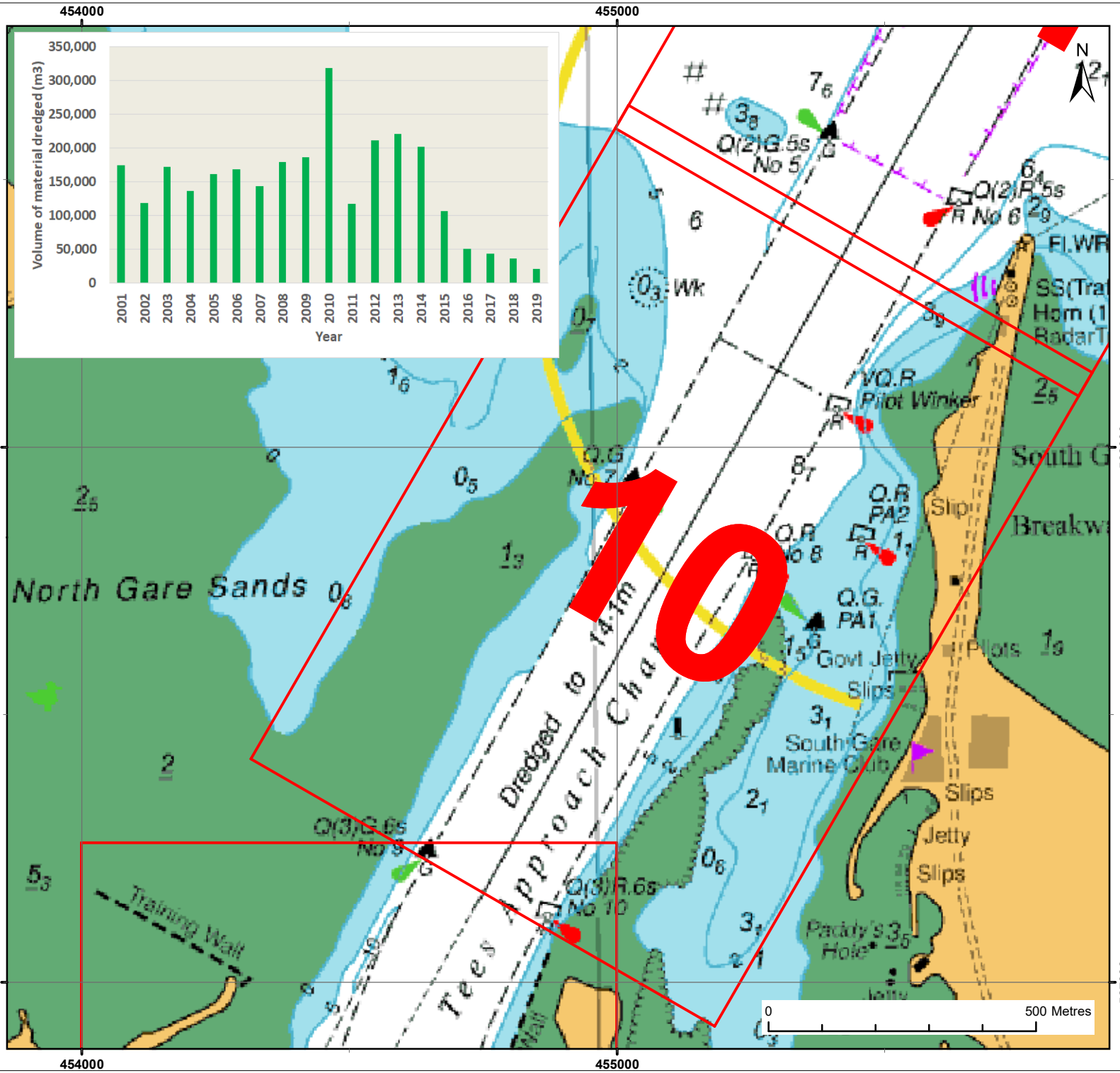

Legend

Section

Client:	Project:
PD Teesport	Tees Maintenance Dredging Baseline Document

Title: Reach 10

Figure: K

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
0	01/04/2020	TC	ES	A4	1:10,000

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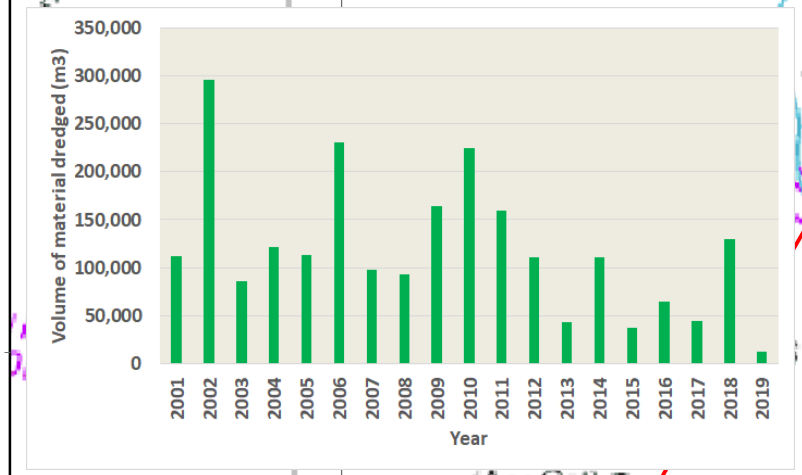

Legend

Section

Client:	Project:
PD Teesport	Tees Maintenance Dredging Baseline Document

Title: Reach 11

Figure: L

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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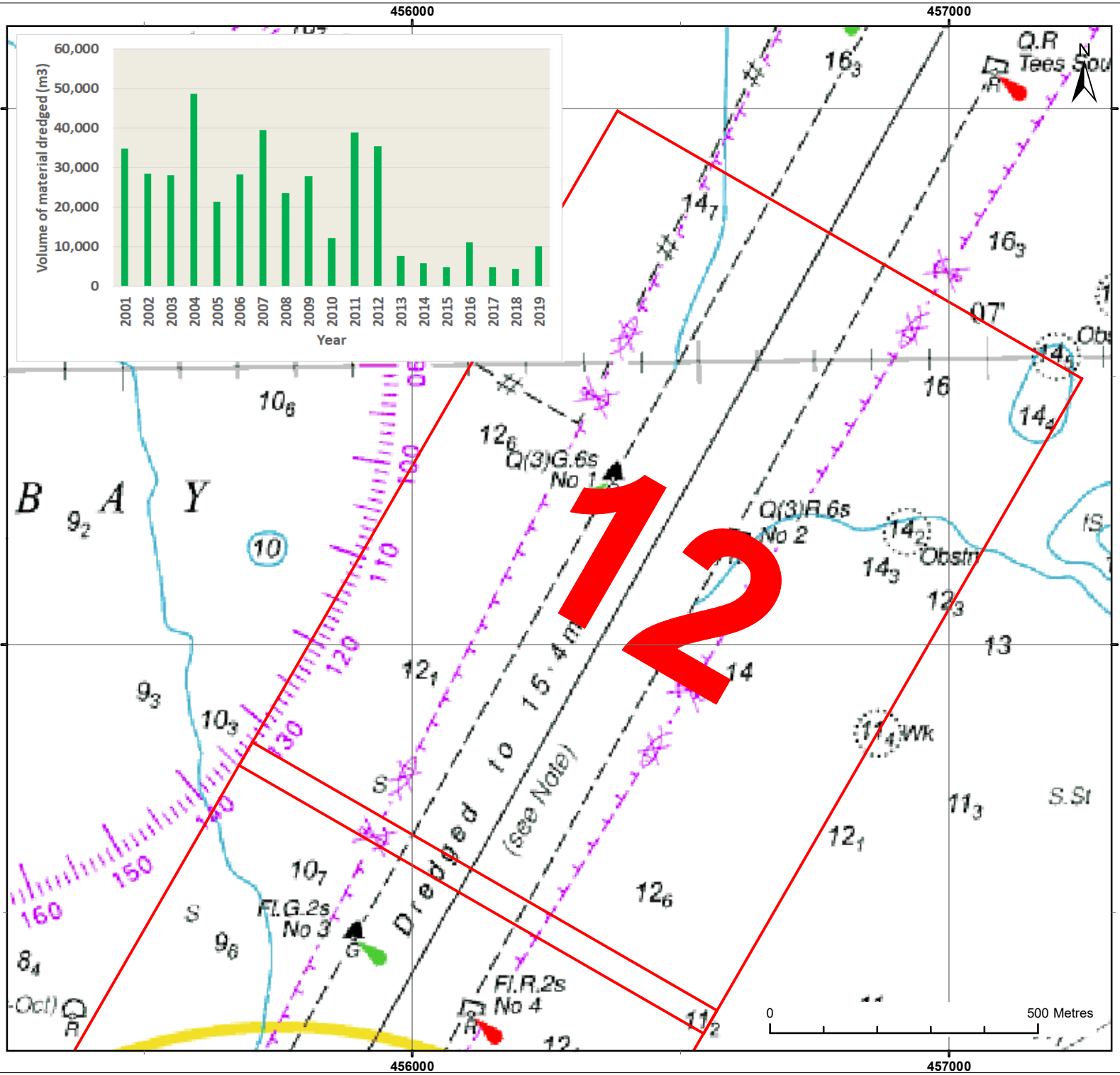

Legend

Section

Client:	Project:
PD Teesport	Tees Maintenance Dredging Baseline Document

Title: Reach 12

Figure: M

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
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