

Lower Thames Crossing

6.3 Environmental Statement Appendices

Appendix 11.1 – Excavated Materials Assessment

APFP Regulation 5(2)(a)

Infrastructure Planning (Applications:
Prescribed Forms and Procedure)
Regulations 2009

Volume 6

DATE: October 2022

Planning Inspectorate Scheme Ref: TR010032
Application Document Ref: TR010032/APP/6.3

VERSION: 1.0

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6.3 Environmental Statement Appendices

Appendix 11.1 – Excavated Materials Assessment

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1 Executive summary

- 1.1.1 The A122 Lower Thames Crossing Project (the Project) would require the excavation of large volumes of material at several sites.
- 1.1.2 In order to identify the potential preferred options for the management of this excavated material, an Excavated Materials Assessment was undertaken. The Excavated Materials Assessment (this document) is included as one of the appendices to Chapter 11: Material Assets and Waste, of the Environmental Statement (Application Document 6.1).
- 1.1.3 This Excavated Materials Assessment was developed for the following purposes:
- a. To validate available offsite capacity at third-party potential receiver sites
 - b. To determine which third-party potential receiver sites would be capable of accepting excavated materials from the Project
 - c. To divert surplus excavated material away from landfill
- 1.1.4 The Excavated Materials Assessment supports Chapter 11: Material Assets and Waste, of the Environmental Statement (Application Document 6.1) by demonstrating there is sufficient capacity at suitable potential sites to manage excavated materials. The Excavated Materials Assessment also provides a mechanism for assessing any additional suitable potential sites for the treatment, handling or use of excavated material.
- 1.1.5 The assessment methodology for the Excavated Materials Assessment is based on sustainability appraisal. The options assessment was undertaken prior to submitting the application for development consent for the Project and before construction contractors were appointed, in order to provide confidence that a sustainable solution can be delivered for all of the excavated material.
- 1.1.6 The assessment followed a phased approach and at each stage the least-preferred sites were eliminated until the final most-viable and sustainable sites were identified. The sites on the list demonstrate the potential capacity to manage the excavated material in a sustainable manner.
- 1.1.7 The long list comprised 335 potential sites. The sites on the long list were assessed against a series of initial screening criteria (ISC) related to the following:
- a. Envisaged operational period of the potential receiver site
 - b. Permissible waste streams accepted
 - c. Potential receiver site capacity
 - d. Permit and planning status of the site
 - e. The potential receiver site being located within the local area
 - f. The potential receiver sites that passed the ISC were subject to a detailed assessment.

- 1.1.8 The detailed assessment used eight objectives to ensure that potential receiver sites with an appropriate level of sustainability performance were prioritised over poorer-performing sites.
- 1.1.9 For every site, the detailed assessment was completed through desk-based assessment of publicly available information, phone interviews with the operator and review of relevant documents (e.g. Environmental Permits and planning consents).
- 1.1.10 The sites that passed the detailed assessment include five sites located north of the River Thames and three sites located south of the Thames.
- 1.1.11 It could be necessary to use a number of receiver sites to manage the excavated material generated by the Project. Therefore, a combination of sites could form the final solution with respect to end uses or beneficial uses of the material. Inclusion on the detailed assessment list does not guarantee that the receiver site would be used, as this could:
- a. prejudice any future procurement exercise
 - b. potentially rule out alternative receiver sites that perform as well as those on the detailed assessment list and which may become available prior to commencing construction of the Project.
- 1.1.12 The Contractors would assess any new potential receiver sites (and/or existing sites) that are proposed, using the methodology presented in the Excavated Materials Assessment. Further information is shown in the Register of Environmental Actions and Commitments (REAC) (REAC Ref. MW012), detailed in the Code of Construction Practice (CoCP) (Application Document 6.3). If development consent is granted, any information on potential receiver sites received following approval of the Development Consent Order application would need to be assessed by potential Contractors as part of the procurement stage to ascertain whether the new potential receiver sites (and/or existing sites) are suitable.

2 Introduction

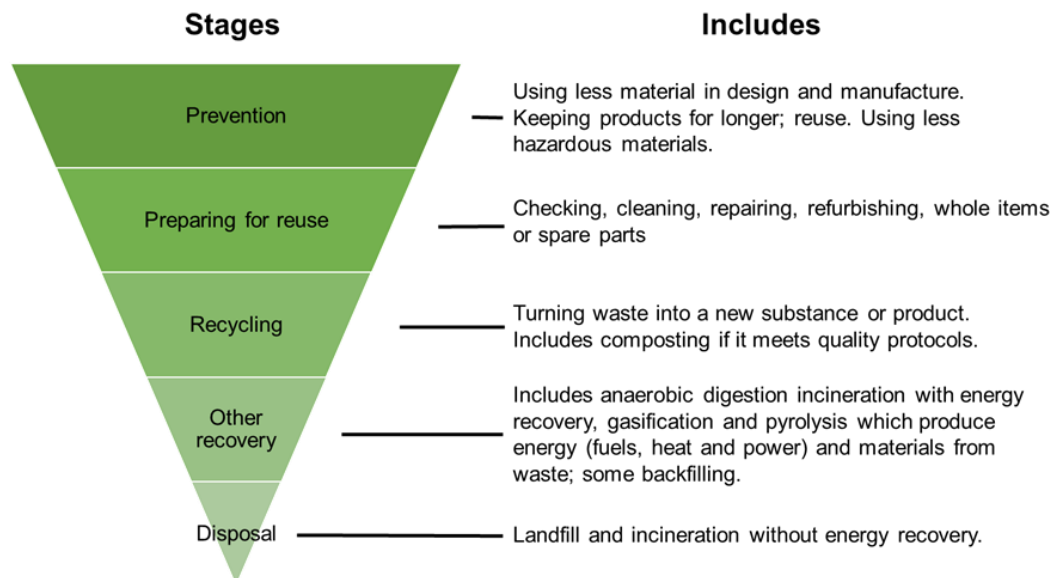
Overview

- 2.1.1 The A122 Lower Thames Crossing (the Project) would provide a connection between the A2 and M2 in Kent, south-east of Gravesend, crossing under the River Thames through a tunnel, before joining the M25 south of junction 29.
- 2.1.2 The A122 would be approximately 23km long, 4.25km of which would be in tunnel. On the south side of the River Thames, the Project route would link the tunnel to the A2 and M2. On the north side, it would link to the A13, M25 junction 29 and the M25 south of junction 29. The tunnel entrances would be located to the east of the village of Chalk on the south of the River Thames and to the west of East Tilbury on the north side.
- 2.1.3 Waste would also arise at many locations within the Project footprint from enabling works, and construction, demolition and excavation (CDE) activities. The flow of waste and materials, both internally within the Order Limits using a combination of the existing highway network and dedicated haul routes, and externally on the surrounding highway network, are detailed in the outline Materials Handling Plan (oMHP) (Application Document 6.3, Appendix 2.2, Annex B).
- 2.1.4 Due to the size of the Project, construction compounds are proposed to the south and north of the River Thames. Further details on the need and location of construction compounds can be found in the outline Materials Handling Plan (Application Document 6.3, Appendix 2.2, Annex B).
- 2.1.5 The detailed assessment of the impacts from materials and waste management is discussed in Chapter 11: Material Assets and Waste of the Environmental Statement (ES) (Application Document 6.1).
- 2.1.6 The assessment shows that the Project would generate approximately 12.5 million m³ (cubic metres) of excavated materials, of which approximately 12.35 million m³ is expected to be suitable for use either on or off the site. Material that is not suitable for use or is excess to requirements is likely to be considered waste. In such event, the material would require waste classification and recycling/recovery or offsite disposal at an appropriately permitted facility, as detailed in the Register of Environmental Actions and Commitments (REAC) in the Code of Construction Practice (CoCP) (Application Document 6.3) (REAC Ref. MW007).
- 2.1.7 The Applicant is committed to implementing circular economy principles throughout design and construction, including the waste hierarchy (see Plate 2.1), moving waste management practices as far up the hierarchy as practicable and reducing impacts on waste infrastructure receptors.
- 2.1.8 In addition to reducing waste through design, the Project design has sought to reuse as much excavated material on site as feasible, including the following:
- a. Movement towards a balanced cut and fill, to reduce the offsite management of excavated materials
 - b. Alteration of the tunnel alignment and portal locations to reduce excavation volumes

- c. Reduction in footprint for temporary and permanent works, resulting in less material movement
- d. Reduction in carriageway width
- e. Retention and reuse of all topsoil within the Order Limits

2.1.9 As a result of the above, the Applicant would seek to reuse an estimated 11,176,500 m³ of excavated material within the Project design.

Plate 2.1 Waste hierarchy



2.1.10 Having applied the principles of designing out waste and increasing the reuse and recovery of materials within the design proposals, calculations indicate that there would be a net surplus of approximately 350,000m³ of excavated materials to be removed from the Project and this material would be the largest single waste stream (by volume) leaving the Order Limits.

2.1.11 To manage this excess material sustainably, a number of mitigation measures have been proposed in Section 11.5 of ES Chapter 11: Material Assets and Waste (Application Document 6.1). Of particular relevance are the following:

- a. Excavated material (and all wastes) would be managed in line with the waste hierarchy. Preference is given to appropriate reuse, recycling and recovery where feasible and permitted by the design. Clean, naturally occurring soils would be used within the Order Limits in line with Directive 2008/98/EC on Waste (Waste Framework Directive), Article 2. Contractors would implement the necessary Environmental Permits, exemptions and complete a Materials Management Plan (as per the Definition of Waste: Development Industry Code of Practice (CL:AIRE, 2011) for the use of Made Ground and contaminated soils. Material that is not suitable for use or is excess to requirements is likely be considered waste. In such event, the material would require waste classification and recycling/recovery or offsite disposal at an appropriately permitted facility (REAC Ref. MW007)

- b. The Contractors would achieve a target that 95% (by weight) of inert construction, demolition and excavation wastes destined for off-site waste management outside the Order Limits would be diverted from final disposal in landfill. (REAC Ref. MW011)
- c. The Contractors would use the methodology described in Appendix 11.1, Excavated Materials Assessment [this document], to identify sites that score positively against a sustainability scoring system agreed with The Applicant. (REAC Ref. MW012)

2.1.12 This document focuses on non-hazardous excavated materials only, including stone, chalk and tunnel-related material arisings.

2.1.13 This document does not include other construction-related wastes, or address impacts from the operational phase of the Project. Both are addressed in Chapter 11: Material Assets and Waste (Application Document 6.1).

2.1.14 This document has been prepared in consultation with the Environment Agency and local authorities (see Table 11.1 in Chapter 11: Material Assets and Waste (Application Document 6.1)).

Aims and objectives of this report

2.1.15 This assessment aims to assess whether there is sufficient offsite capacity within the assessment study area for the reuse, recycling and/or recovery of the excavated materials arising from the construction works. This is to provide confidence to support the assessment undertaken and mitigation measures proposed in Chapter 11: Material Assets and Waste (Application Document 6.1). This assessment sets out the methodology used to assess an initial long list of potential receiver sites and presents the resultant short list of potential receiver sites capable of managing the excavated materials expected to be generated during the construction phase.

2.1.16 A transparent assessment methodology has been outlined. The criteria used integrate environmental, legal, social and economic factors to enable a holistic, sustainable assessment. These prioritise safe potential receiver sites that would have the least impact on the environment and locality.

2.1.17 Should alternative options be considered these would be assessed using the criteria established in this document. The Contractors would assess any new receiver sites (and/or existing sites) that are proposed using the methodology presented in the Excavated Materials Assessment (REAC Ref. MW012).

2.1.18 This commitment is secured through the REAC, which is part of Appendix 2.2: Code of Construction Practice (Application Document 6.3).

2.1.19 It should be noted that, where a potential receiver site has progressed to the short list, this does not guarantee its use during the construction phase of the Project.

Volumes and type of excavated materials

2.1.20 It is important to ascertain the likely physical (geotechnical) and chemical properties of the excavated materials to establish appropriate handling and use both on and offsite.

- 2.1.21 The ground conditions and geology are highly variable along the Project route. A comparison of the geological cross-section and proposed design indicates that the type and volume of materials are expected to be as shown in Table 2.1.
- 2.1.22 A detailed description of these anticipated properties is provided in Chapter 10: Geology and Soils (Application Document 6.1).
- 2.1.23 In terms of waste classification, a review of the anticipated geology and soils indicates that most waste is expected to be inert or non-hazardous with smaller contributions of hazardous waste, typically associated with Made Ground.
- 2.1.24 Assumptions have been made as to the usability of excavated and tunnelled ground materials. This was factored to specific geologies and based on anticipated ground contamination or geotechnical properties (without treatment). For this assessment, waste that is not anticipated to be contaminated has been assumed to be non-hazardous.
- 2.1.25 As part of proposed mitigation, the Applicant has committed to a target that 70% (by weight) of non-hazardous excavated materials destined for waste management outside the Order Limits would be diverted from final disposal to landfill (REAC Ref. MW013).
- 2.1.26 The Applicant has also committed to include within all relevant procurement documentation for the Project, a target that 95% (by weight) of inert excavated materials destined for waste management outside the Order Limits would be diverted from final disposal in landfill (REAC Ref. MW011).
- 2.1.27 It is likely that a proportion of the excavated material would be classified as inert however as a reasonable worst case it has therefore assumed that 70% of non-hazardous materials destined for waste management outside the Order Limits would be reused, recycled and/or recovered.
- 2.1.28 The following paragraphs provide a breakdown of the surplus excavated material volumes generated by the Project. For the purposes of the earthworks assessment construction worksites have been grouped into areas as shown in Plate 2.2.

Plate 2.2 Construction Sections



- 2.1.29 For Section A (Kent Roads), it has been determined that all inert/non-hazardous excavated material would be reused, recycled and/or recovered within the Project design and therefore the volume of surplus inert excavated material is assumed to be zero.
- 2.1.30 The volume of surplus excavated non-hazardous materials anticipated from Section C and Section D (both Roads North) is approximately 250,000m³ for each section, of which 175,000m³ is diverted from landfill and the remaining 75,000m³ is disposed of to landfill, as shown in Table 2.1. Although there is no surplus material anticipated to be generated for Section A (Kent Roads) a review of the available receiver sites south of the River Thames has been included in this assessment.
- 2.1.31 For Section B (North and South Tunnels & Approaches), it has been assumed that the surplus non-hazardous excavated material generated by the tunnelling activities would be managed by waste facilities located within the Order Limits and that it would therefore be excluded from the assessment of offsite waste recycling/recovery management and capacity. This was considered to be the best overall environmental outcome for these excavated materials as it negates the need to transport the waste offsite. The transportation of waste (excluding any hazardous waste) from the construction and tunnelling operations would not be on the local road network but would be offline, using heavy duty construction vehicles. Haul routes would be constructed to facilitate the movement at the North Portal site.

Table 2.1 Volume and type of surplus excavated materials (as dug)

Location	Waste generated	Estimated m ³	Anticipated management (REAC Ref.)
Section A – Kent Roads			
South of the River Thames Material is anticipated to be Chalk (as dug), with lesser contributions of Made Ground and Head deposits.	Contaminated excavated material (potentially hazardous)	1,050	30% sent for offsite disposal (MW015)
	Contaminated excavated material (potentially hazardous)	2,450	70% recovered/recycled (MW015)
Section B			
South of River Thames – tunnel and approaches Material is anticipated to be Chalk (as dug) with lesser contributions of Made Ground, Alluvium, River Terrace Deposits and Head deposits.	Contaminated excavated material (potentially hazardous)	0	Not applicable
North of River Thames – tunnel and approaches Material is anticipated to be Chalk slurry (from tunnel-boring machine) with Made Ground (landfill), pulverised fuel ash, Peat and Alluvium from the launch ramp and North Portal area.	Non-hazardous excavated material	660,000	Transportation to Ingrebourne Valley Limited receiver site, which is located within the Order Limits.
	Contaminated excavated material (potentially hazardous)	46,200	30% sent for offsite disposal (MW015)
	Contaminated excavated material (potentially hazardous)	107,800	70% recovered/recycled (MW015)

Location	Waste generated	Estimated m ³	Anticipated management (REAC Ref.)
Section C – Roads North			
North of the River Thames Material is anticipated to be Made Ground, Alluvium, River Terrace Deposits and clay.	Non-hazardous excavated material	175,000	70% diverted landfill, in line with commitment (MW013)
	Non-hazardous excavated material	75,000	30% landfill disposal
	Contaminated excavated material (potentially hazardous)	0	Not applicable
	Contaminated excavated material (potentially hazardous)	0	Not applicable
Section D – Roads North			
North of the River Thames Material is anticipated to be Made Ground, Alluvium, River Terrace Deposits and Clay.	Non-hazardous excavated material	175,000	70% Diversion from landfill in line with commitment (MW011)
	Non-hazardous excavated material	75,000	30% landfill disposal
	Contaminated excavated material (potentially hazardous)	1,800	30% sent for offsite disposal (MW015)
	Contaminated excavated material (potentially hazardous)	4,200	70% recovered/recycled (MW015)
Summary			
Total volume for offsite management (m ³)	Non-hazardous excavated material (recycling/recovery outside the Order Limits)	350,000	70% Diversion from landfill in line with commitment (MW011)
	Non-hazardous excavated material (disposal outside the Order Limits)	150,000	30% landfill disposal
	Contaminated excavated material (potentially hazardous)	163,500	Managed offsite

Location	Waste generated	Estimated m ³	Anticipated management (REAC Ref.)
Total volume for management within the Order Limits (m ³)	Non-hazardous excavated material (management within the Order Limits)	660,000	All material generated by the tunnel excavation within Section B North. Transportation to Ingrebourne Valley Limited receiver site via the haul road network, which is located within the Order Limits.

Note: all figures are calculated without bulking.

Project programme

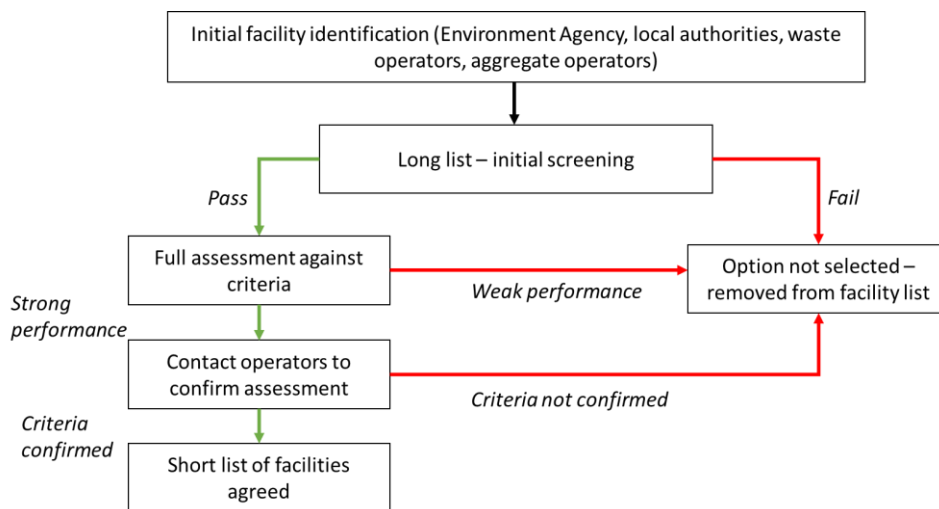
- 2.1.32 To enable appropriate planning for removing excavated materials, it is essential to establish the phasing of the excavations. This will ensure there is enough capacity available offsite at potential receiver sites during the construction phase.
- 2.1.33 A forecast, based on the envisaged earthworks scenario, anticipated over the Project's construction programme, is presented in Table 2.1 with the total volumes of presumed inert and non-hazardous waste presented. Note that these volumes include excavated material leaving site for disposal as well as recycling/recovery.
- 2.1.34 Excavation works are anticipated to start in 2025, comprising site clearance, compound and temporary site access road set-up, establishing temporary utility connections, early utility diversion and protection, and establishing environmental mitigation. The Project is planned to open in late 2030.
- 2.1.35 The core earthworks activity is anticipated to fall between 2025 and 2030 in the north and south of the Order Limits (for offsite export of stockpiled ground materials). An output rate of 1,680t/day (tonnes per day) is based on an annual volume of offsite exports of 200,000m³ (420,000 tonnes), assuming a five-day week over 50 weeks.
- 2.1.36 The assessment evaluates a potential receiver site's ability to accept the total volume of non-hazardous excavated material at the rate at which it is anticipated to be produced.

3 Methodology

Methodology overview

- 3.1.1 The methodology applied provides a standardised approach for identifying third-party potential receiver sites available to the Project.
- 3.1.2 First, the potential receiver site’s sustainability credentials were evaluated. A short list was then produced of viable potential receiver sites with sufficient capacity to receive the anticipated surplus excavated materials from the Project.
- 3.1.3 A phased approach was implemented, with several data sources examined to generate a long list of third-party potential receiver sites as detailed in paragraph 3.1.9. The long list was screened against a set of initial screening criteria (ISC) and the resulting qualifying sites subjected to detailed assessment and scoring (see paragraph 3.1.21 onwards).
- 3.1.4 Following the detailed assessment, a short list was identified of potential receiver sites that could be available to accept surplus excavated materials during the Project construction phase.
- 3.1.5 The methodology is summarised in Plate 3.1 with each step discussed in greater detail below.

Plate 3.1 Summary of the Excavated Materials Assessment methodology



- 3.1.6 The methodology is designed to be flexible and transparent, as volumes and composition of materials may change, potential receiver sites may move on or offline, and new information may be presented in the pre-construction period.
- 3.1.7 A site can be considered for reassessment in the future if the reason for the failure against the ISC is addressed, such as an extension to the site capacity or acquisition of an Environmental Permit.
- 3.1.8 Due to the volume anticipated and the rate of production, it is unlikely that a single site would be used to accept all the surplus excavated material during the construction phase. It is likely that a combination of sites would be required.

Long list

- 3.1.9 Several data sources were used to compile a list of potential receiver sites that could receive excavated materials from the Project, including the following:
- a. Environment Agency Permitting Regulation Database (Environment Agency, 2022a) and direct engagement
 - b. Local authority registers and records, and direct engagement (Table 11.4 of Chapter 11: Material Assets and Waste (Application Document 6.1))
 - c. Literature review of major infrastructure project Development Consent Order submissions (Crossrail, High Speed 2 (HS2), Thames Tideway Tunnel, Silvertown Tunnel, Port of Tilbury 2, and Thurrock Flexible Generation Plant)
 - d. Contaminated Land: Applications in Real Environments Register of Materials (CL:AIRE, 2021)
 - e. Internet research on relevant sectors, e.g. waste operators, brownfield redevelopment, contaminated land, and ecological restoration projects in the local area
 - f. Direct dialogue with potential receiver site operators
 - g. Direct dialogue with waste and aggregate operators
- 3.1.10 Each identified potential receiver site was listed along with several details such as the site location, the operator, permissible waste streams accepted, remaining receiver site capacity and permit and/or planning status.
- 3.1.11 The data collection resulted in a long list of 335 potential receiver sites to progress through the initial screening exercise (Annex A).

Initial screening exercise

- 3.1.12 Following the preliminary data collection, the potential receiver sites identified were subject to assessment using the ISC outlined in Table 3.1. The ISC were based on several parameters, including the envisaged operational period of the potential receiver site, permissible waste streams accepted, potential receiver site capacity, permit and planning status of the site and the potential receiver site being located within the local area.
- 3.1.13 Using the ISC, it was possible to determine a potential receiver site's viability for use during the construction phase. This took into consideration factors including whether it would be operational, permitted, operating under planning consent, within the local area and offer sufficient receiving capacity for construction wastes (European Waste Catalogue Chapter 17 Codes) (Scottish Environment Protection Agency, Natural Resources Wales and Environment Agency (2021)).
- 3.1.14 Where a potential receiver site scored 'red' against any of the ISC, it did not progress in the assessment and was considered operationally unfeasible to use during the construction phase.

- 3.1.15 A site score may show ‘not applicable’ (N/A) where a site scored ‘red’ for one of the criteria (as this disqualifies it from further assessment).
- 3.1.16 A small number of potential receiver sites that passed the ISC declined to be involved in the assessment or did not return attempts made to contact them. A detailed assessment therefore could not be carried out, and these entries were amended in the initial screen to ‘not applicable’.
- 3.1.17 A site was only progressed to the next phase of ‘detailed assessment’ if it scored ‘green’ or ‘amber’.
- 3.1.18 A capacity screen of 100,000t/yr (tonnes per year) was applied to the potential receiver sites to refine the assessment to larger sites as it was considered that these would be more able to accommodate the volume and rate of excavated material anticipated to be generated by the Project.

Table 3.1 Initial screening criteria

ISC	Green	Amber	Red
I1 – facility operational during Project construction phase (2025 to 2030)	Site likely to be operational during construction phase	Site may be operational during construction phase	Site will not be operational during construction phase
I2 – material type acceptable at receiver site	Several types of excavated material acceptable at receiver site	At least one type of excavated material acceptable at receiver site	No types of excavated material acceptable at receiver site
I3 – sufficient capacity at receiver site	Facility has significant capacity to accept material (100,000t/yr)	Facility does not have sufficient capacity, but additional capacity expected	Facility does not have sufficient capacity to accept material
I4 – appropriate permit/consent/Materials Management Plan (MMP) in place to receive material	Facility has appropriate provision in place	Facility does not have appropriate provision in place, but is proposed/in process	Facility does not have appropriate provision in place and has no plans to acquire
I5 – appropriate planning consent in place	Facility has appropriate provision in place	Facility does not have appropriate provision in place, but is proposed/in process	Facility does not have appropriate provision in place and has no plans to acquire
I6 – facility within the local area (20km radius from Order Limits)	Facility is within the local area (20km) or close to alternative transport (e.g. rail, river)	Facility is within 40km or close to alternative transport (e.g. rail, river)	Facility is not within the local area or close to alternative transport (e.g. rail, river)

- 3.1.19 The output of the ISC exercise is presented in Annex A.
- 3.1.20 The application of the ISC generated a ‘full assessment list’ of 11 potential receiver sites to progress through detailed assessment.

Detailed assessment

- 3.1.21 The potential receiver sites that passed the ISC were subject to a detailed assessment.
- 3.1.22 The purpose of the detailed assessment was to establish the sustainability performance for the potential receiver sites by introducing assessment objectives that focus on wider performance as well as environmental and safety risk.
- 3.1.23 The detailed assessment used eight objectives to ensure that potential receiver sites with an appropriate level of sustainability performance were prioritised over poorer-performing sites.
- 3.1.24 Each objective was broken down into indicators, which were assessed and scored individually.
- 3.1.25 The objectives, indicators and evaluation criteria used in the detailed assessment are presented in Table 3.3.
- 3.1.26 For every site, the detailed assessment was completed through desk-based assessment of publicly available information, phone interviews with the operator, and review of pertinent documents (e.g. Environmental Permits and planning consents).
- 3.1.27 During the detailed assessment, operator questionnaires and interviews were used to validate the output from the ISC. Where information gained through discussions indicated that the site was not viable, it was subsequently removed from the assessment.
- 3.1.28 The assessment is based on quantitative assessments, for example site distance from the Project, and qualitative assessments, for example professional judgement of landscape impacts.
- 3.1.29 The source of information used for the assessment of each indicator and how the score was calculated and/or allocated is presented in Annex B.
- 3.1.30 The output of the detailed assessment is presented in Annex C.
- 3.1.31 Using the objectives and criteria above, each potential receiver site was scored and allocated a performance grade (from - - to ++) and colour in line with Table 3.2 to establish which potential receiver site performed best.
- 3.1.32 An exception was applied for the operational viability indicators, where an indicator could not be evaluated and was awarded a score of 0, with the reasons recorded.

Table 3.2 Performance grade

Impact	Score
Major adverse	--
Minor adverse	-
Negligible	0
Minor beneficial	+
Major beneficial	++

Table 3.3 Objective indicators and evaluation criteria

#	Objective title	Objective indicator	Evaluation criteria				
			-- Major adverse/ very poor performance	- Minor adverse/ poor performance	0 Negligible impact/ meets expectations	+ Minor beneficial/ good performance	++ Major beneficial/ very good performance
1	Applying the waste hierarchy	Receiving site intention – recycling, reuse, restoration or landfill void	More than 70% of excavated material will be placed in a landfill void at the receiver site	<70% material may be placed in landfill as well as reused for restoration with treatment at the receiver site	All material reused for restoration, but requires treatment to enable use at the receiver site	All material reused for restoration but with some minimal treatment at the receiver site	Majority of material reused with no treatment prior to reuse/recovery at the receiver site
2	Ensuring good health, safety and environmental (HS&E) performance	a) HS&E performance – safety – no fatalities/prosecutions in five years	The site has had fatalities or prosecutions for HS&E offences*	The site has had a caution/improvement notice in the past five years	The site has had no fatalities or prosecutions for HS&E offences	N/A	N/A
		b) HS&E performance – environment – no environmental offences prosecutions in five years	The site has had successful prosecutions/cautions relating to environmental pollution in the past five years	The site has had a prosecution/caution relating to administration of the site permit in the past five years	The site has had no prosecutions/cautions in the past five years	N/A	N/A
3	Receiver site operational viability	a) Site operational	The site is unlikely to be operational during the construction phase*	N/A	The site is likely to be operational for some of the construction phase (2025 to 2030)	The site is likely to be operational for all of the construction phase (2025 to 2030)	The site is likely to be operational during the construction phase (2025 to 2030) and beyond

#	Objective title	Objective indicator	Evaluation criteria				
			-- Major adverse/ very poor performance	- Minor adverse/ poor performance	0 Negligible impact/ meets expectations	+ Minor beneficial/ good performance	++ Major beneficial/ very good performance
		b) Site can receive appropriate waste type	The site cannot receive any of the likely excavated material types*	N/A	The site can receive at least one of the likely excavated material types	The site can receive at least two of the likely excavated material types	The site can receive three or more of the likely excavated material types
		c) Site has >100,000t/yr capacity and can receive a percentage of incoming material for restoration	The site can receive <10% of anticipated arisings in construction phase/year	The site can receive between 10 and 25% of anticipated arisings in construction phase/year	The site can receive between 25 and 40% of anticipated arisings in construction phase/year	The site can receive between 40 and 50% of anticipated arisings in construction phase/year	The site can receive 50% or more of anticipated arisings in construction phase/year
		d) Site can receive material at the desired rate	The site can receive up to 1,000t/day	The site can receive up to 1,500t/day	The site can receive up to 2,000t/day	The site can receive up to 2,500t/day	No daily or weekly restriction on volume of material to be imported or vehicle movements, or site can receive up to and over to 3,000t/day
		e) Site has an appropriate Environmental Permit/ exemption/ MMP in place	The site has no current permit to receive the materials, and no plans at present to acquire one*	The site has no current permit to receive the materials, but plans to acquire one in future or is currently in process	The site has a valid permit in place to receive excavated materials	N/A	N/A

#	Objective title	Objective indicator	Evaluation criteria				
			-- Major adverse/ very poor performance	- Minor adverse/ poor performance	0 Negligible impact/ meets expectations	+ Minor beneficial/ good performance	++ Major beneficial/ very good performance
		f) Site has appropriate planning consent in place throughout the construction phase	The site has no current planning permission to receive the materials, and no plans at present to acquire one*	The site has no current planning permission to receive the materials, but application is in process; or permission will expire during the construction phase	The site has a valid planning consent in place to receive excavated materials throughout the construction phase	N/A	N/A
		g) Site location – proximity principle	The site is >20km from either the North or South Portal	The site is ≤20km from either the North or South Portal	The site is ≤15km from either the North or South Portal	The site is ≤10km from either the North or South Portal	The site is accessible from the Project worksite or with ≤1km journey on public roads
	Managing climate change impacts	a) Greenhouse gases (GHG) emitted from vehicles transporting material away from the Project	N/A	Higher carbon impact – in the bottom third of assessed sites	In the mid range of assessed sites	Lowest carbon impact – in the top third of assessed sites	N/A
		b) GHG emitted through handling/ treatment at the receiving site	The incoming material would require significant transportation and	The incoming material would require significant transportation and	The incoming material would not require significant transportation and	The incoming material would not require significant transportation and onsite treatment	N/A

#	Objective title	Objective indicator	Evaluation criteria				
			-- Major adverse/ very poor performance	- Minor adverse/ poor performance	0 Negligible impact/ meets expectations	+ Minor beneficial/ good performance	++ Major beneficial/ very good performance
			onsite treatment and handling	onsite treatment and handling	onsite treatment and handling	and handling; site offsets its carbon emissions or has a documented Energy and Carbon Management Plan	
		c) Impact on flood risk at the receiver site	The incoming material would significantly increase the risk of flooding to the surrounding area	The incoming material would likely increase the risk of flooding to the surrounding area	The incoming material would not increase the risk of flooding to the surrounding area	The incoming material would likely decrease the risk of flooding to the surrounding area	The incoming material would significantly decrease the risk of flooding to the surrounding area
		d) Alternative transport available (rail/river)	N/A	The site can only receive material by public highway	The site can be accessed by rail and river, with some road transport on public highway	The site can be accessed by rail, river and without access via the public highway	N/A
5	Managing landscape effects	Impact on character, quality and amenity of views	Receipt and use of material likely to have an adverse visual impact on the surrounding area during placement/use and in the long term	Receipt and use of material likely to have an adverse visual impact on the surrounding area during placement/use but not in the long term	Receipt and use of material likely to have no significant visual impact on the surrounding area during placement/use and in the long term	Receipt and use of material likely to have a beneficial visual impact on the surrounding area during placement/use or in the long term	Receipt and use of material likely to have a beneficial visual impact on the surrounding area during placement/ use and in the long term

#	Objective title	Objective indicator	Evaluation criteria				
			-- Major adverse/ very poor performance	- Minor adverse/ poor performance	0 Negligible impact/ meets expectations	+ Minor beneficial/ good performance	++ Major beneficial/ very good performance
6	Managing water quality effects	a) Impact on surface water resources	Receipt and use of material likely to have a major adverse impact on local surface water receptors	Receipt and use of material likely to have a minor adverse impact on local surface water receptors	Receipt and use of material likely to have no significant impact on local surface water receptors	Receipt and use of material likely to have a minor beneficial impact on local surface water receptors	Receipt and use of material likely to have a major beneficial impact on local surface water receptors
		b) Impact on groundwater resources	Receipt and use of material likely to have a major adverse impact on local groundwater receptors	Receipt and use of material likely to have a minor adverse impact on local groundwater receptors	Receipt and use of material likely to have no significant impact on local groundwater receptors	Receipt and use of material likely to have a minor beneficial impact on local groundwater receptors	Receipt and use of material likely to have a major beneficial impact on local groundwater receptors
7	Managing biodiversity effects	Effects on biodiversity receptors (designated sites)	Receipt and use of material likely to have a major adverse impact on at least one designated site	Receipt and use of material likely to have a minor adverse impact on at least one designated site	Receipt and use of material likely to have no significant impact on a designated site but does not create a new habitat onsite	Receipt and use of material likely to have a minor beneficial impact on at least one designated site, or create <1ha of new habitat onsite	Receipt and use of material likely to have a major beneficial impact on at least one designated site, or create over 1ha of new habitat onsite
8	Managing heritage effects	Effects on heritage receptors	Receipt and use of material likely to have a major adverse impact on at least one heritage receptor	Receipt and use of material likely to have a minor adverse impact on at least one heritage receptor	Receipt and use of material likely to have no significant impact on any heritage receptor	Receipt and use of material likely to have a minor beneficial impact on at least one heritage receptor	Receipt and use of material likely to have a major beneficial impact on at least one heritage receptor

* Triggers removal from assessment.

Assumptions

- 3.1.33 The assessment was based on third-party interviews and data collection in 2019. It is assumed that the information received is factual and accurate. The data was reviewed and re-validated in 2022.
- 3.1.34 The forecast programme, origin and volumes of excavated materials are based on current Project understanding. It is acknowledged that this information may change in the future.
- 3.1.35 It has been assumed that excavated materials are segregated by type at the point of origin to allow separate dispatch of inert, non-hazardous and hazardous materials.
- 3.1.36 If conversion between cubic metres and tonnes (t) is required, a conversion factor of 2.2 was used.
- 3.1.37 Where a site permit is limited by the number of lorry movements per day, it has been assumed that a lorry holds 18 tonnes.
- 3.1.38 It has been assumed that the annual peak volume of non-hazardous excavated material for offsite exports is approximately 200,000m³.
- 3.1.39 Where assessment of an objective is based on a distance calculation, this has been assumed from the Order Limits to the approximate boundary of the receiver site. While it does not reflect that excavated materials may originate across the Project, it is considered to form a useful and appropriate base for comparison between potential receiver sites.

Limitations

- 3.1.40 As there is no single source of data or register, it is unlikely that the original long list was exhaustive. It is therefore likely that potentially viable receiver sites have not been included in the assessment.
- 3.1.41 Several qualitative assessments have been required, using professional judgement.
- 3.1.42 Smaller potential receiver sites' (<100,000t/year) capacities have been excluded in order to create a manageable assessment. The assessment does not exclude their use as part of a suite of receiver sites, subject to them performing to the required standard on other indicators.
- 3.1.43 There is also the possibility to utilise CL:AIRE receiver sites. These are sites that are kept on a Register of Materials list where sites might fall within the Definition of Waste: Code of Practice (DoW CoP). These are generally sites that have a smaller capacity but, as above, could also be used as part of a suite of receiver sites subject to them performing to the required standard on other indicators.
- 3.1.44 This Excavated Materials Assessment reviewed potentially suitable receiver sites of at the time of assessment. It is likely that these sites will be subject to change and other sites may become available before the construction phase starts.
- 3.1.45 It is acknowledged that some of the potential receiver sites listed in the assessment have received excavated materials from other major infrastructure

projects (of similar nature to the Project) including Crossrail and Thames Tideway. Projects including HS2 are potentially set to send excavated material to potential receiver sites listed in the assessment. Therefore, the capacity at some receiving sites may have depleted before construction starts on the Project. The Excavated Materials Assessment represents the available sites at a point in time. The Contractors would use the methodology described in this document, to identify reuse sites that score positively against a sustainability scoring system agreed with the Applicant (REAC Ref. MW012).

- 3.1.46 Potential receiver sites which failed the ISC, for example due to a valid permit not being in place, may come online before or during construction and become viable receiver sites.
- 3.1.47 It is also acknowledged that other development and/or construction sites could potentially be available to accept the excavated materials generated from the Project. Sites of this nature have not been included in the assessment given the uncertainties surrounding suitability, availability and demand. However, this does not preclude any development and/or construction sites forming part of the final solution for the management of excavated material.
- 3.1.48 This Excavated Materials Assessment provides the methodology and flexibility for such potential receiver sites to be used in future following further assessment during detailed design. It is also likely that other sites would become available before construction commences. The Contractors would assess any new receiver sites (and/or existing sites) that are proposed, using the methodology presented in the Excavated Materials Assessment (REAC Ref. MW012). Sites would be considered acceptable where they perform no worse than those sites on the detailed assessment list (at the time of submission of the DCO application).

4 Assessment output

- 4.1.1 Following the collection of more detailed information and assessment, the potential receiver sites were awarded a score.
- 4.1.2 The score was based on the number of red/amber/green (RAG) and the summation of the score between -2 (- -) and +2 (+ +). This is summarised in Table 4.1.
- 4.1.3 The assessment in Annex C demonstrates that approximately 5.9 million m³ of capacity for reuse/recycling/recovery operations potentially exists within 20km of the Project to the north of the River Thames, and approximately 4.4 million m³ to the south of the Thames. A total potential capacity of approximately 10.3 million m³ exists in the vicinity of the Project.
- 4.1.4 Given the anticipated total surplus of excavated material volume from north of the River Thames requiring reuse/recycling/recovery offsite is approximately 350,000m³, sufficient capacity is present north of the river to receive the material.
- 4.1.5 The assessment has shown that there are potential receiver sites with sufficient capacity to accept surplus non-hazardous excavated materials at the rate and duration forecast.
- 4.1.6 Further, as discussed in the baseline in Section 11.4 of Chapter 11: Material Assets and Waste (Application Document 6.1), a number of landfill sites are expected to come to their end of life before the end of the construction phase. Therefore, additional reuse/recycling/recovery volume capacity is expected to come online associated with the restoration of these sites.

Table 4.1 Detailed assessment outcome

Location	Site	1	2a	2b	3a	3b	3c	3d	3e	3f	3g	4a	4b	4c	4d	5	6a	6b	7	8	Score RAG
North of the River Thames	Dansand Quarry	+	0	-	+	0	++	++	0	0	++	+	-	0	+	-	+	0	+	0	+9
	Goshems Farm (IVL)	+	0	0	+	++	++	++	0	0	++	+	-	0	+	+	0	0	0	0	+12
	Ockendon	-	0	0	++	0	++	++	0	0	++	+	-	0	+	+	0	0	0	0	+9
	Pitsea	+	0	0	+	++	-	++	0	0	0	0	-	0	+	+	0	0	+	0	+7
	Rainham Marshes	+	0	0	++	++	++	++	0	0	0	-	-	0	+	-	0	0	++	0	+9
South of the River Thames	Cliffe Pools (all locations)	--	0	0	++	++	--	++	0	0	+	0	-	0	+	0	0	0	++	0	+5
	Ebbsfleet Development Site	+	0	0	++	0	++	++	0	0	+	0	-	0	-	0	0	0	+	0	+7
	Hermitage	+	0	-	++	++	++	++	0	0	0	-	-	0	-	0	0	0	0	0	+5

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Annexes

Annex A Initial Screen Output

Source	Site	Licence Name	ISC1 Operational	ISC2 Type mat	ISC3 Capacity 100,000	ISC4 Consent	ISC5 Planning	ISC6 20km
Environment Agency	Whalebone Lane	Carzo Ltd	N/A	N/A	N/A	N/A	N/A	N/A
Environment Agency	Land off East Hall Lane RM13	Havering Aggregates	N/A	N/A	N/A	N/A	N/A	N/A
Environment Agency	Wallasea Island	RSPB						
Environment Agency	Bluelands Quarry	S. Walsh & Son Limited						
Environment Agency	Workhouse Road	Gallagher Aggregates Ltd		N/A	N/A	N/A	N/A	N/A
Environment Agency	Parsonage Lane	Downland Trading (Kent) Limited	N/A	N/A	N/A	N/A	N/A	N/A
Environment Agency	Hermitage Lane	Gallagher Aggregates Ltd						
Environment Agency	Ockendon Medebridge	Veolia E S Cleanaway (UK) Ltd						
Environment Agency	St Mary Hoo	Biffa Waste Services Ltd	N/A	N/A	N/A	N/A	N/A	N/A
Environment Agency	Rainham (Wennington) Marshes	Land and Water						
Environment Agency	Rainham LF, Coldharbour Lane	Veolia E S Cleanaway (UK) Ltd						
Environment Agency	Teston Road	Waste Recycling Group (Central) Ltd	N/A	N/A	N/A	N/A	N/A	N/A
Environment Agency	Margetts Lane	Margetts Pit Limited	N/A	N/A	N/A	N/A	N/A	N/A
Environment Agency	Manor Road	Bexley Sand & Ballast Company						
Environment Agency	Hainault Road	Tarmac Aggregates Limited	N/A	N/A	N/A	N/A	N/A	N/A
Environment Agency	Stone Pit 1	Land Logical Limited	N/A	N/A	N/A	N/A	N/A	N/A
Environment Agency	Stone Pit 2	Stonepit Restoration Limited	N/A	N/A	N/A	N/A	N/A	N/A
Environment Agency	Pitsea	Veolia						
Environment Agency	Little Belhus	Rural Arisings Ltd						
Environment Agency	Isle of Grain	J Clubb	N/A	N/A	N/A	N/A	N/A	N/A
Environment Agency	Darenth Court	J Clubb	N/A	N/A	N/A	N/A	N/A	N/A
Environment Agency	Perrys Farm	J Clubb	N/A	N/A	N/A	N/A	N/A	N/A
Environment Agency	Addington Sand Pit	Fern Aggregates		N/A	N/A	N/A	N/A	N/A
Environment Agency	Ightham sandpit	H&H Celcon		N/A	N/A	N/A	N/A	N/A
Environment Agency	Mucking Landfill	Veoli/RSPB		N/A	N/A	N/A	N/A	N/A
Environment Agency	Dansand Quarry	Recycled in Orsett						
Environment Agency	Ebbsfleet Development Site	Ebbsfleet Development Corporation						
Environment Agency	Lower Rainham Road	Kent Land Reclamation Ltd	N/A	N/A	N/A	N/A	N/A	N/A
Borough Green Sand Pits (BGSP)	Borough Green Landfill	Borough Green Sand Pits Ltd						
BGSP	Strood	Borough Green Sand Pits Ltd						
Lafarge Tarmac	Kingsnorth Sand and Gravel Quarry	Lafarge Tarmac						

Source	Site	Licence Name	ISC1 Operational	ISC2 Type mat	ISC3 Capacity 100,000	ISC4 Consent	ISC5 Planning	ISC6 20km
Lafarge Tarmac	Stanway Hall Farm	Lafarge Tarmac						
Lafarge Tarmac	Wivenhoe Quarry	Lafarge Tarmac						
Lafarge Tarmac	Holborough Quarry and Snodland	Lafarge Tarmac						
Lafarge Tarmac	Stonecastle Farm	Lafarge Tarmac						
Lafarge Tarmac	Greatness Farm, Sevenoaks	Lafarge Tarmac						
Hanson	Tapwood Quarry	Hanson						
Hanson	Sutton Courtenay	Hanson						
Hanson	Crayford	Hanson	N/A	N/A	N/A	N/A	N/A	
Cemex	Barrington	Cemex						
Cemex	Rugby Parkfield Road	Cemex						
Cemex	Denge Quarry, Lydd	Cemex	N/A	N/A	N/A	N/A	N/A	
Aggregate Industries	Croft Quarry	Aggregate Industries						
Aggregate Industries	Kempsford	Aggregate Industries						
Aggregate Industries	Newbold	Aggregate Industries						
Brett	Cliffe Pools (all)	Brett Aggregates Ltd						
Brett	Fairlop	Brett Aggregates Ltd						
Brett	Iver	Brett Aggregates Ltd						
Brett	Lenham	Brett Aggregates Ltd						
Brett	Rainham sites	Brett Aggregates Ltd						
Brett	Sandon	Brett Aggregates Ltd						
Brett	Allens Bank	Brett Aggregates Ltd						
Brett	East Tilbury Quarry	Brett Aggregates Ltd		N/A	N/A	N/A	N/A	N/A
Brett	Faversham Quarries	Brett Aggregates Ltd		N/A	N/A	N/A	N/A	N/A
Brett	Lydd Quarry	Brett Aggregates Ltd		N/A	N/A	N/A	N/A	N/A
Brett	Conningbrook Quarry	Brett Aggregates Ltd		N/A	N/A	N/A	N/A	N/A
Brett	Highstead Quarry, Chislet	Brett Aggregates Ltd		N/A	N/A	N/A	N/A	N/A
Brett	Burleigh Farm, Charing	Brett Aggregates Ltd		N/A	N/A	N/A	N/A	N/A
Brett	Charing Quarry, Charing	Brett Aggregates Ltd		N/A	N/A	N/A	N/A	N/A
Ingrebourne Valley Limited	Goshems Farm	IVL						
Ingrebourne Valley Limited	Ingrebourne Hill	IVL						
Ingrebourne Valley Limited	Joyce Green Quarry, Dartford	IVL		N/A	N/A	N/A	N/A	N/A
Ingrebourne Valley Limited	Little Gerpin 2	IVL		N/A	N/A	N/A	N/A	N/A
Ingrebourne Valley Limited	Gerpins Lane	IVL		N/A	N/A	N/A	N/A	N/A
Ingrebourne Valley Limited	Ingrebourne Links Golf & Country Club	IVL		N/A	N/A	N/A	N/A	N/A

Source	Site	Licence Name	ISC1 Operational	ISC2 Type mat	ISC3 Capacity 100,000	ISC4 Consent	ISC5 Planning	ISC6 20km
Ingrebourne Valley Limited	Spring Farm Landfill	IVL		N/A	N/A	N/A	N/A	N/A
Ingrebourne Valley Limited	Cockhide Quarry	IVL		N/A	N/A	N/A	N/A	N/A
Ingrebourne Valley Limited	Medina Farm	IVL						
Ingrebourne Valley Limited	Football pitches, Belhus	IVL						
Ingrebourne Valley Limited	Walton Hall Farm, Thurrock	IVL						
Ingrebourne Valley Limited	Aherns	IVL						
Ingrebourne Valley Limited	Wennington Quarry	IVL						
Ingrebourne Valley Limited	Newport Quarry	IVL						
Environment Agency	Bellingham Way	SRCL Waste Management Ltd	N/A			N/A	N/A	
Environment Agency	Archers Field	Cohart Asbestos Disposal Ltd	N/A			N/A	N/A	
Environment Agency	Magpie Lane	GJ Bowmer (Waste Disposal) Ltd	N/A			N/A	N/A	
Environment Agency	Comp Road	United Services Corporation Ltd	N/A			N/A	N/A	
Environment Agency	Lake Road	Safetykleen UK Ltd	N/A			N/A	N/A	
Environment Agency	Mills Road	Cleansing Services Group Ltd	N/A			N/A	N/A	
Environment Agency	Hérons Court	PF Ahern (London) Ltd	N/A			N/A	N/A	
Environment Agency	Christy Way	Safetykleen UK Ltd	N/A			N/A	N/A	
Environment Agency	Runwood Road	Aspect Contracts Ltd	N/A			N/A	N/A	
Environment Agency	Kingsnorth Industrial Estate	Slicker Recycling Ltd	N/A			N/A	N/A	
Environment Agency	Littlebrook Manor Way	National Grid plc	N/A			N/A	N/A	
Environment Agency	Charles Street	Drum Distribution Services UK Ltd	N/A			N/A	N/A	
Environment Agency	Chatham Docks	Mobile Compactor Services Ltd	N/A			N/A	N/A	
Environment Agency	River Road	Multi Services Kent Ltd	N/A		N/A	N/A	N/A	
Environment Agency	Springhead Road	Polihim-SS UK Ltd	N/A			N/A	N/A	
Environment Agency	Bradfield Road	Keltbray AWS Ltd	N/A			N/A	N/A	
Environment Agency	Watling Street	Albus Environmental Ltd	N/A			N/A	N/A	
Environment Agency	Courtauld Road	Pelsis Ltd	N/A			N/A	N/A	
Environment Agency	Hovefields Avenue	TLM Management Ltd	N/A			N/A	N/A	
Environment Agency	Rochester Way Relief Road	UK Power Networks (Holdings) Ltd	N/A			N/A	N/A	
Environment Agency	Horn Link Way	Peter Norris (Haulage) Ltd	N/A		N/A	N/A	N/A	
Environment Agency	River Road	McGrath Group Ltd	N/A			N/A	N/A	
Environment Agency	Twelvetrees Crescent	Bywaters (Leyton) Ltd	N/A		N/A	N/A	N/A	
Environment Agency	Gallions Close	Edwards Waste Paper Ltd	N/A			N/A	N/A	
Environment Agency	Dock Road	G. & B. Compressor Hire Ltd	N/A			N/A	N/A	
Environment Agency	Romainville Way, Kings Road	B W Rice Plant & Skip Hire Ltd	N/A			N/A	N/A	

Source	Site	Licence Name	ISC1 Operational	ISC2 Type mat	ISC3 Capacity 100,000	ISC4 Consent	ISC5 Planning	ISC6 20km
Environment Agency	Rawreth Industrial Estate	Franklin Hire Ltd	N/A			N/A	N/A	
Environment Agency	Brunel Road	Benfleet Scrap Co Ltd	N/A			N/A	N/A	
Environment Agency	River Road	SUEZ Ltd (recycling and recovery, south-east)	N/A			N/A	N/A	
Environment Agency	Harvey Road	Alan M. Stone	N/A			N/A	N/A	
Environment Agency	Ferry Lane South	Adler & Allan Ltd	N/A			N/A	N/A	
Environment Agency	York Road	Kilnbridge Construction Services Ltd	N/A			N/A	N/A	
Environment Agency	Chequers Lane	R White Waste Management Ltd	N/A			N/A	N/A	
Environment Agency	Wrexham Road	Charlie Mc Dermott	N/A			N/A	N/A	
Environment Agency	Vikings Way	Canvey Skip Hire & Recycling Ltd	N/A			N/A	N/A	
Environment Agency	Archers Field	PGR Waste Management Ltd	N/A			N/A	N/A	
Environment Agency	Launders Lane	Havering Aggregates Ltd	N/A			N/A	N/A	
Environment Agency	Nathan Way	Veolia ES Cleanaway (UK) Ltd	N/A		N/A	N/A	N/A	
Environment Agency	Laverstoke Road	Kent Enviropower Ltd	N/A			N/A	N/A	
Environment Agency	Stock Road	TD Buttlng & PJ Cars & Plant Ltd	N/A			N/A	N/A	
Environment Agency	Parsons Road	Essex County Skips Ltd	N/A			N/A	N/A	
Environment Agency	Harvey Road	Robert Michael Walker and Victoria Kathleen Walker	N/A			N/A	N/A	
Environment Agency	Botany Way	Killoughery Waste Management Ltd	N/A			N/A	N/A	
Environment Agency	Dock Road	Brewsters Waste Management Ltd	N/A			N/A	N/A	
Environment Agency	Brentwood Road	Sims Environmental & Recycling Services Ltd	N/A			N/A	N/A	
Environment Agency	Burnt Mills Industrial Estate	GBN Services Ltd	N/A			N/A	N/A	
Environment Agency	Ripple Road	Biffa Waste Services Ltd	N/A			N/A	N/A	
Environment Agency	Albright Estate	First London Environmental Ltd	N/A			N/A	N/A	
Environment Agency	Salamons Way	Peter Craven	N/A			N/A	N/A	
Environment Agency	Oliver Close	PF Ahern (London) Ltd	N/A			N/A	N/A	
Environment Agency	Albright Industrial Estate	Sharp Skips Ltd	N/A			N/A	N/A	
Environment Agency	Barleylands Road	Basildon District Council	N/A			N/A	N/A	
Environment Agency	Coldharbour Lane	Veolia ES Cleanaway (UK) Ltd	N/A			N/A	N/A	
Environment Agency	Ley Street	Redbridge London Borough Council	N/A			N/A	N/A	
Environment Agency	Jenkins Lane	East London Waste Authority (ELWA) Ltd	N/A		N/A	N/A	N/A	
Environment Agency	River Road	Clearun Recycling Ltd	N/A			N/A	N/A	
Environment Agency	Juliette Way	Tony Passey	N/A			N/A	N/A	
Environment Agency	Ferry Lane	Albright Transfer Station Ltd	N/A			N/A	N/A	

Source	Site	Licence Name	ISC1 Operational	ISC2 Type mat	ISC3 Capacity 100,000	ISC4 Consent	ISC5 Planning	ISC6 20km
Environment Agency	Stondon Road	Heatherland Ltd	N/A			N/A	N/A	
Environment Agency	River Road	McGrath Group Ltd	N/A		N/A	N/A	N/A	
Environment Agency	Rosedene	David Romanus Brown	N/A			N/A	N/A	
Environment Agency	Rawreth Lane	T J Cottis Transport Ltd	N/A			N/A	N/A	
Environment Agency	Stock Road	Ash Plant Hire Ltd	N/A			N/A	N/A	
Environment Agency	Stephenson Street	IOD Skip Hire Ltd	N/A		N/A	N/A	N/A	
Environment Agency	Hastingwood Road	GBN Services Ltd	N/A			N/A	N/A	
Environment Agency	Rainham Road North	ELWA Ltd	N/A			N/A	N/A	
Environment Agency	Brunel Road	Brian Wallace	N/A			N/A	N/A	
Environment Agency	Station Approach	Peter Norris (Haulage) Ltd	N/A			N/A	N/A	
Environment Agency	London Rd	T J Skips Ltd	N/A			N/A	N/A	
Environment Agency	Sevenoaks Road	BSP (Knockholt) Ltd	N/A			N/A	N/A	
Environment Agency	Ham Hill Quarry	Tarmac Trading Limited	N/A			N/A	N/A	
Environment Agency	Templemarsh Estate	Kent Soils and Composts Ltd	N/A			N/A	N/A	
Environment Agency	Knight Road	Countrystyle Recycling Ltd	N/A			N/A	N/A	
Environment Agency	Greenwich Transfer Station	Peter Norris (Haulage) Ltd	N/A			N/A	N/A	
Environment Agency	Pinden End	Pinden Ltd	N/A			N/A	N/A	
Environment Agency	Station Road	FCC Recycling (UK) Ltd	N/A		N/A	N/A	N/A	
Environment Agency	Heronden Road	Rentokil Initial UK Ltd	N/A			N/A	N/A	
Environment Agency	Manor Way	Crossways Recycling Ltd	N/A			N/A	N/A	
Environment Agency	Old Rochester Way	Easy Load Ltd	N/A			N/A	N/A	
Environment Agency	Knight Road	Andrew David Stevens	N/A			N/A	N/A	
Environment Agency	Atcost Road	Wastecare Limited	N/A			N/A	N/A	
Environment Agency	Landau Way	Daniel McGinley	N/A			N/A	N/A	
Environment Agency	Chequers Lane	Connect Waste Management Ltd	N/A			N/A	N/A	
Environment Agency	Leslie Ford House	Port of Tilbury London Ltd	N/A			N/A	N/A	
Environment Agency	Knight Road	S. Lawrence (Crushing Contractors) Ltd	N/A			N/A	N/A	
Environment Agency	Yabsley Street	Cory Environmental Ltd	N/A			N/A	N/A	
Environment Agency	Port of Tilbury	SUEZ Ltd	N/A			N/A	N/A	
Environment Agency	Terminus Drive	James Heard and Marie Heard	N/A			N/A	N/A	
Environment Agency	New Road	B & P Scrap Co Ltd	N/A			N/A	N/A	
Environment Agency	Cranes Close	PF Ahern (London) Ltd	N/A			N/A	N/A	
Environment Agency	London Road	MR Services (Essex) Ltd	N/A			N/A	N/A	
Environment Agency	Albion Road	Toulouse Plant Hire Ltd	N/A			N/A	N/A	

Source	Site	Licence Name	ISC1 Operational	ISC2 Type mat	ISC3 Capacity 100,000	ISC4 Consent	ISC5 Planning	ISC6 20km
Environment Agency	Penhall Road	Recycled Material Supplies Ltd	N/A			N/A	N/A	
Environment Agency	Dockside North Of Sheds 32 And 33	SUEZ Ltd	N/A		N/A	N/A	N/A	
Environment Agency	Northwick Road	James Heys & Sons Ltd	N/A			N/A	N/A	
Environment Agency	Bircholt Road	Maidstone Borough Council	N/A			N/A	N/A	
Environment Agency	Port of Tilbury	SUEZ Ltd	N/A			N/A	N/A	
Environment Agency	Queens Farm Road	RS Skips Ltd	N/A			N/A	N/A	
Environment Agency	River Road	Excel Skip Hire Ltd	N/A			N/A	N/A	
Environment Agency	New Hythe Lane	London Mining Associates Ltd	N/A			N/A	N/A	
Environment Agency	Medway City Estate	Veolia ES (UK) Ltd	N/A			N/A	N/A	
Environment Agency	Southfields Industrial Estate	Great Bear Distribution Ltd	N/A			N/A	N/A	
Environment Agency	London Road	BSP (Knockholt) Ltd	N/A			N/A	N/A	
Environment Agency	Creek Road	Workrate Ltd	N/A			N/A	N/A	
Environment Agency	London Industrial Park	Terrafirma Pipeline Ltd	N/A			N/A	N/A	
Environment Agency	Stondon Road	Philip W Keen Ltd	N/A			N/A	N/A	
Environment Agency	Little Queen Street	A Winchester & Sons	N/A			N/A	N/A	
Environment Agency	Land on Breach Lane	Hanson Quarry Products Europe Ltd	N/A			N/A	N/A	
Environment Agency	Royal Eagle Close	Viridor Waste Kent Ltd	N/A			N/A	N/A	
Environment Agency	Bilton Road Industrial Estate	Viridor Waste Management Ltd	N/A			N/A	N/A	
Environment Agency	Coldharbour Lane	Veolia ES Cleanaway (UK) Ltd	N/A			N/A	N/A	
Environment Agency	Watling Street	Erith Haulage Company Ltd	N/A			N/A	N/A	
Environment Agency	Port of Tilbury	URM (UK) Ltd	N/A		N/A	N/A	N/A	
Environment Agency	Chapel Lane	Geoffrey Thompson	N/A			N/A	N/A	
Environment Agency	Atcost Road	Plasterzone Ltd	N/A			N/A	N/A	
Environment Agency	Berth 36-38	Ballast Phoenix Ltd	N/A			N/A	N/A	
Environment Agency	Lombard Wall	Day Group Limited	N/A		N/A	N/A	N/A	
Environment Agency	Coldharbour Lane	Ballast Phoenix Ltd	N/A			N/A	N/A	
Environment Agency	Dugdale Wharf	George Dugdale, Mark Dugdale and Steven Dugdale	N/A			N/A	N/A	
Environment Agency	Liphook Way	Hanson Quarry Products Europe Ltd	N/A			N/A	N/A	
Environment Agency	Crayford Creek	Viridor Waste Management Ltd	N/A		N/A	N/A	N/A	
Environment Agency	Shernhall Street	BJ Electronics (UK) Ltd	N/A			N/A	N/A	
Environment Agency	Off Ferry Lane	Veolia ES Cleanaway (UK) Ltd	N/A			N/A	N/A	
Environment Agency	Manor Way	Sheerness Recycling Ltd	N/A			N/A	N/A	
Environment Agency	St Michaels Close	Enterprise (AOL) Ltd	N/A			N/A	N/A	

Source	Site	Licence Name	ISC1 Operational	ISC2 Type mat	ISC3 Capacity 100,000	ISC4 Consent	ISC5 Planning	ISC6 20km
Environment Agency	New Charlton	H Sivyer (Transport) Ltd	N/A			N/A	N/A	
Environment Agency	Oriental Road	Harrow Green Ltd	N/A			N/A	N/A	
Environment Agency	Watson Close	Brocks Haulage Ltd	N/A			N/A	N/A	
Environment Agency	Marsh Street	Thames Water Utilities Ltd	N/A			N/A	N/A	
Environment Agency	Ham Hill Quarry	Tarmac Trading Ltd	N/A			N/A	N/A	
Environment Agency	Jurgens Road	Aggregate Industries UK Ltd	N/A			N/A	N/A	
Environment Agency	Rawreth Industrial Estate	Flowline Ltd	N/A			N/A	N/A	
Environment Agency	Ashleigh Commercial Estate	Recycled Materials Supplies Ltd	N/A			N/A	N/A	
Environment Agency	Creek Way	Shanks Waste Management Ltd	N/A		N/A	N/A	N/A	
Environment Agency	Jenkins Lane	Shanks Waste Management Ltd	N/A			N/A	N/A	
Environment Agency	Coldharbour Lane	Veolia ES Landfill Ltd	N/A			N/A	N/A	
Environment Agency	Trottiscliffe Road	Ferns Surfacing Ltd	N/A			N/A	N/A	
Environment Agency	Rochester Way	FM Conway Ltd	N/A		N/A	N/A	N/A	
Environment Agency	Chequers Lane	Neptune Contract Services Ltd	N/A			N/A	N/A	
Environment Agency	Ferry Lane South	S Walsh & Sons Ltd	N/A			N/A	N/A	
Environment Agency	Archers Field Close	Clearaway Recycling Ltd	N/A			N/A	N/A	
Environment Agency	Bradfield Road	Recycled Material Supplies Ltd	N/A			N/A	N/A	
Environment Agency	Brunel Road	Anglo Environmental Engineering & Construction Ltd	N/A			N/A	N/A	
Environment Agency	Pitsea	Batterfly Ltd	N/A		N/A	N/A	N/A	
Environment Agency	Perry Road	Recycled Material Supplies Ltd	N/A			N/A	N/A	
Environment Agency	Stock Road	PJ Cars & Plant Ltd	N/A			N/A	N/A	
Environment Agency	Romainville Way	BW Rice Plant & Skip Hire Ltd	N/A			N/A	N/A	
Environment Agency	Holford Road	Clearserve Ltd	N/A			N/A	N/A	
Environment Agency	Manor Road	Erith Remediation Technologies Ltd	N/A			N/A	N/A	
Environment Agency	Perry Road	Van Dalen UK Ltd	N/A			N/A	N/A	
Environment Agency	Coldharbour Lane	EDL Operations (Rainham) Ltd	N/A			N/A	N/A	
Environment Agency	Coldharbour Lane	Veolia ES Landfill Ltd	N/A		N/A	N/A	N/A	
Environment Agency	High Road	John Evans, Timothy Evans and Terry Evans	N/A			N/A	N/A	
Environment Agency	Manor Road	Bexley Sand & Ballast Company Ltd	N/A			N/A	N/A	
Environment Agency	Woolmonger's Lane	John Davies	N/A			N/A	N/A	
Environment Agency	Juliette Way	GF Gordon Plant Hire Ltd	N/A			N/A	N/A	
Environment Agency	Upnor Road	Southern Water Services Ltd	N/A			N/A	N/A	
Environment Agency	North Cray Road	Adam Stuart, Billy Stuart and Boris Stuart	N/A			N/A	N/A	

Source	Site	Licence Name	ISC1 Operational	ISC2 Type mat	ISC3 Capacity 100,000	ISC4 Consent	ISC5 Planning	ISC6 20km
Environment Agency	Cody Road Business Centre	Orion Support Services Ltd	N/A			N/A	N/A	
Environment Agency	Manor Way	F. J. Church & Sons Ltd	N/A			N/A	N/A	
Environment Agency	Hermitage Lane	Gallagher Aggregates Ltd	N/A		N/A	N/A	N/A	
Environment Agency	Chatham Docks	Street Fuel Ltd	N/A			N/A	N/A	
Environment Agency	Manor Road	Recresco Ltd	N/A			N/A	N/A	
Environment Agency	Hailey Road	Meridian Technical Services Ltd	N/A			N/A	N/A	
Environment Agency	Maidstone Rd	Borough Green Sand Pits Ltd	N/A			N/A	N/A	
Environment Agency	Tunnel Avenue	H. Sivyer (Transport) Ltd	N/A		N/A	N/A	N/A	
Environment Agency	Manor Way	Veka Recycling Ltd	N/A			N/A	N/A	
Environment Agency	Horn Lane	Aggregate Industries UK Ltd	N/A			N/A	N/A	
Environment Agency	Ferry Lane	Excel Waste Management Ltd	N/A			N/A	N/A	
Environment Agency	Juliette Way	Seales Road Haulage Ltd	N/A			N/A	N/A	
Environment Agency	Rochester Works	Gypsum Recycling UK Ltd	N/A			N/A	N/A	
Environment Agency	Crabtree Manorway North	Highway United Ltd	N/A			N/A	N/A	
Environment Agency	Bull Lane	Southern Water Services Ltd	N/A			N/A	N/A	
Environment Agency	Tunnel Avenue	Associated Reclaimed Oils Ltd	N/A			N/A	N/A	
Environment Agency	Brentwood Road	Palmer & Klein Ltd	N/A			N/A	N/A	
Environment Agency	Charles Street	Williams Environmental Management Ltd	N/A			N/A	N/A	
Environment Agency	Hovefields Avenue	Total Waste Management Ltd	N/A			N/A	N/A	
Environment Agency	Station Road	Mayer Parry Recycling Ltd	N/A		N/A	N/A	N/A	
Environment Agency	Wharf Road	GMR (Kent) Limited	N/A			N/A	N/A	
Environment Agency	Globe Industrial Estate	Benfleet Scrap Co Ltd	N/A			N/A	N/A	
Environment Agency	Brunel Road	Benfleet Scrap Co Ltd	N/A			N/A	N/A	
Environment Agency	Manor Road	Alan Lowe and Albert Henry Lowe	N/A			N/A	N/A	
Environment Agency	Hume Avenue	Specialist Metal Services Ltd	N/A			N/A	N/A	
Environment Agency	Manor Road	European Metal Recycling Ltd	N/A		N/A	N/A	N/A	
Environment Agency	Manor Road	Vinton Metals Ltd	N/A			N/A	N/A	
Environment Agency	River Road	S Norton & Co Ltd	N/A			N/A	N/A	
Environment Agency	Kerry Avenue	Shields Environmental Plc	N/A			N/A	N/A	
Environment Agency	Harvey Road	Benfleet Scrap Co Ltd	N/A			N/A	N/A	
Environment Agency	Alfreds Way	Creek Metals Limited	N/A			N/A	N/A	
Environment Agency	Woodside	Total Waste Management Ltd	N/A			N/A	N/A	
Environment Agency	Kerry Avenue	Shields Environmental Ltd	N/A			N/A	N/A	
Environment Agency	Bidder Street	Mayer Parry Recycling Ltd	N/A			N/A	N/A	

Source	Site	Licence Name	ISC1 Operational	ISC2 Type mat	ISC3 Capacity 100,000	ISC4 Consent	ISC5 Planning	ISC6 20km
Environment Agency	Woolmongers Lane	Mark Juniper	N/A			N/A	N/A	
Environment Agency	South Crescent	The Remet Company Ltd	N/A			N/A	N/A	
Environment Agency	Blackheath Gate, Charlton Way	The Royal Parks - Greenwich Park	N/A			N/A	N/A	
Environment Agency	Jenkins Lane	Renewi UK Services Ltd	N/A			N/A	N/A	
Environment Agency	Manor Way	Renewi UK Services Ltd	N/A			N/A	N/A	
Environment Agency	Pitsea Hall Lane	Veolia ES Landfill Ltd	N/A			N/A	N/A	
Environment Agency	Matts Hill Road	Biowaste Recovery Ltd	N/A			N/A	N/A	
Environment Agency	Cookham Road	TJ Composting Services Ltd	N/A			N/A	N/A	
Environment Agency	Epping Road	TJ Composting Services Ltd	N/A			N/A	N/A	
Environment Agency	Pitsea Hall Lane	Veolia ES Cleanaway (UK) Ltd	N/A			N/A	N/A	
Environment Agency	Kingsnorth Industrial Estate	Composting Facilities Services Ltd	N/A			N/A	N/A	
Environment Agency	Moreton Bridge	Epping Forest District Council	N/A			N/A	N/A	
Environment Agency	Brook Lane	Ecoclear Ltd	N/A			N/A	N/A	
Environment Agency	Princess Margaret Road	S Walsh & Sons Ltd	N/A			N/A	N/A	
Environment Agency	Chatham Docks	Port of Sheerness Ltd	N/A			N/A	N/A	
Environment Agency	Ferry Lane	G & S Waste Management Ltd	N/A			N/A	N/A	
Environment Agency	Ridley Road	Marks Services & Sons Ltd	N/A			N/A	N/A	
Environment Agency	Maypole Crescent	M & R Building & Landscaping Ltd	N/A			N/A	N/A	
Environment Agency	Moreton Road	John Gemmill and Margaret Gemmill	N/A			N/A	N/A	
Environment Agency	Norman Road	Riverside Resource Recovery Ltd	N/A			N/A	N/A	
Environment Agency	Landau Way	J & H Haulage Ltd	N/A			N/A	N/A	
Environment Agency	Off Chequers Lane	Edwards Recycling Ltd	N/A			N/A	N/A	
Environment Agency	South Crescent	McFen Plant Hire Ltd	N/A			N/A	N/A	
Environment Agency	Ailsa Street	Quick Skips London Ltd	N/A			N/A	N/A	
Environment Agency	Kingsbridge Road	G & S Tyre Services Ltd	N/A			N/A	N/A	
Environment Agency	Thames Road	Max Recycling Ltd	N/A			N/A	N/A	
Environment Agency	Perry Road	Manns Waste Management Ltd	N/A			N/A	N/A	
Environment Agency	George Summers Close	Lisa Langley	N/A			N/A	N/A	
Environment Agency	Marsh Way	Ecotech London Ltd	N/A			N/A	N/A	
Environment Agency	Maypole Crescent	Roll on Off Services Ltd	N/A			N/A	N/A	
Environment Agency	Waldens Road	Syd Bishop & Sons (Demolition) Ltd	N/A			N/A	N/A	
Environment Agency	Thames Wharf	McGee Asbestos Removal Ltd	N/A			N/A	N/A	
Environment Agency	Oliver Close	Asbestos Waste Solutions	N/A			N/A	N/A	
Environment Agency	Kings Road	Frost & Wood Ltd	N/A			N/A	N/A	

Source	Site	Licence Name	ISC1 Operational	ISC2 Type mat	ISC3 Capacity 100,000	ISC4 Consent	ISC5 Planning	ISC6 20km
Environment Agency	Burnt Mills Road	Keltbray Ltd	N/A			N/A	N/A	
Environment Agency	Childerditch Hall Drive	SMH Products Ltd	N/A			N/A	N/A	
Environment Agency	Stanhope Industrial Estate	Lenal Ltd	N/A			N/A	N/A	
Environment Agency	Sandy Lane	Asbestos Transfer Services Ltd	N/A			N/A	N/A	
Environment Agency	Childerditch Hall Drive	Windsor Waste Management Ltd	N/A			N/A	N/A	
Environment Agency	Manor Road	Erith Contractors Ltd	N/A			N/A	N/A	
Environment Agency	Old Maidstone Road	Econ Construction Ltd	N/A			N/A	N/A	
Environment Agency	North Dane Way	3R Waste Ltd	N/A			N/A	N/A	
Environment Agency	Manor Way	Lancebox Ltd	N/A			N/A	N/A	
Environment Agency	Dock Road	Keltbray Environmental Ltd	N/A			N/A	N/A	
Environment Agency	River Road	SUEZ Ltd	N/A			N/A	N/A	
Environment Agency	Choats Road	Veolia ES (UK) Ltd	N/A			N/A	N/A	
Environment Agency	Juliette Way	BPR Group Europe Ltd	N/A			N/A	N/A	
Environment Agency	Kings Hill	New Earth Solutions (Kent) Ltd	N/A			N/A	N/A	
Environment Agency	Thames Road Ind Est	Bishopsgate Iron & Steel Co Ltd	N/A			N/A	N/A	
Environment Agency	River Road	E G Haniel Metals Ltd	N/A			N/A	N/A	
Environment Agency	Factory Road	London City Metals Ltd	N/A			N/A	N/A	
Environment Agency	River Road	Cronimet (London) Ltd	N/A			N/A	N/A	
Environment Agency	Leslie Ford House	S Walsh & Sons Ltd	N/A			N/A	N/A	
Environment Agency	Chatham Docks	Port of Sheerness Ltd	N/A			N/A	N/A	
Environment Agency	River Road	Muckit Recycling Ltd	N/A			N/A	N/A	
Environment Agency	Bidder Street	PMC Soil Solutions Ltd	N/A			N/A	N/A	
Environment Agency	Launders Lanes	Brett Aggregates Ltd	N/A			N/A	N/A	
Environment Agency	Bennett's Industrial Estate	Henderson & Taylor Public Works Ltd	N/A			N/A	N/A	
Environment Agency	Choats Road	Suc-Exc UK Ltd	N/A			N/A	N/A	
Environment Agency	Crabtree Manorway North	JDT (South-East) Ltd	N/A			N/A	N/A	
Environment Agency	Manor Way	JKS Group Ltd	N/A			N/A	N/A	
Environment Agency	Codham Hall Lane	Ferns Surfacing Ltd	N/A			N/A	N/A	
Environment Agency	Gallions Road	Corbyn Construction Ltd	N/A			N/A	N/A	
Environment Agency	Princess Margaret Road	S Walsh & Sons Ltd	N/A			N/A	N/A	
Environment Agency	Off Central Way	Tilfen land Ltd	N/A			N/A	N/A	
Environment Agency	Medway Estuary	Port of Sheerness Ltd	N/A		N/A	N/A	N/A	
Environment Agency	Mill Lane	Waste Recycling Group (Central) Ltd	N/A			N/A	N/A	
S Walsh	Northfleet rail transfer	Waste Recycling Group (Central) Ltd	N/A					

Annex B Methodology – detailed assessment

B.1.1 The detailed assessment methodology for assessing potential receiver sites against the described objectives and indicators (Table 3.3) is outlined below. Where this reiterates the ISC (I1– I6) in Table 3.1, additional scoring guidance is provided.

B.2 Objective 1 – Application of waste hierarchy

B.2.1 **Source:** assessment of this objective is based on an interview with the operator, cross-referenced with pertinent Environmental Permit and planning conditions. Guidance on whether an activity is disposal (landfill) or reuse (restoration) is based on the following:

- a. The stated Recovery (R) or Disposal (D) code in the Environmental Permit
- b. Description of the site activity in Environmental Permit and planning consent: how it will be used, whether it will require treatment, and whether it will be recovered
- c. Whether Landfill Tax is payable on the material

B.2.2 **Scoring:** the intended use of the material at the receiver site is compared against the assessment indicator and scored accordingly.

B.3 Objective 2a – HS&E performance – safety

B.3.1 **Source:** assessment of this objective is based on interview(s) with the operator, cross-referenced with the Health and Safety Executive’s Register of Convictions and Notices. (Health and Safety Executive, 2019).

B.3.2 **Scoring:** the number and nature of prosecutions is used to score this objective indicator.

B.4 Objective 2b – HS&E performance – environment

B.4.1 **Source:** assessment of this objective is based on interview(s) with the operator, cross-referenced with the Environment Agency’s Register of Enforcement Actions (Environment Agency, 2022b).

B.4.2 **Scoring:** the number and nature of prosecutions is used to score this objective indicator.

B.5 Objective 3a – Operational viability – site operational (I1)

- B.5.1 **Source:** assessment of this objective is based on the operator estimating their anticipated operational period based on committed contracts and fill rates. This was verified against pertinent Environmental Permit and planning conditions on permitted capacity and annual import limits.
- B.5.2 If the site is a landfill, it was also cross-referenced to the Environment Agency Permitting Regulations Database (Environment Agency, 2022a) to determine the remaining permitted void capacity and calculate whether the site would be able to receive material through the construction phase.
- B.5.3 **Scoring I1:** a site must be operational during the Project's construction phase to pass the initial screening assessment.
- B.5.4 **Scoring 3a:** this objective indicator is scored based on how many years the potential receiver site would be operational during the Project's construction phase (2025 to 2030).

B.6 Objective 3b – Operational viability – site can receive appropriate waste type (I2)

- B.6.1 **Source:** assessment of this objective is based on the European Waste Codes listed in the site-specific Environmental Permit and reviewed alongside other pertinent permit details.
- B.6.2 **Scoring I2:** a site must be able to accept the waste code for non-hazardous and inert soil (construction waste – soil and stone – 17 05 04) to pass the initial screening assessment.
- B.6.3 **Scoring 3b:** this objective indicator is scored based on how many waste streams the site can accept.

B.7 Objective 3c – Operational viability – site has capacity over 100,000t/yr (I3)

- B.7.1 **Source:** assessment of this objective is based on the capacity stated in the Environment Agency Permit Register (Environment Agency, 2022a) and the potential receiver site's Environmental Permit, not the potential void space.
- B.7.2 **Scoring I3:** the Environmental Permit must state that import capacity is at least 100,000t/yr to pass the initial screening assessment.
- B.7.3 **Scoring 3c:** this objective indicator is scored based on the amount of waste a potential receiver site can receive each year, calculated as a percentage of the

anticipated arisings from either the north or south side of the River Thames during the construction phase.

B.8 Objective 3d – Operational viability – site can receive material at desired rate

B.8.1 Source: assessment of this objective is based on any permit or planning restrictions regarding the number of vehicles (Heavy Goods Vehicle (HGV), train, barge) movements a day as well as calculated processing capacity.

B.8.2 Scoring: this objective is scored based on the maximum rate at which material can be accepted to a potential receiver site (depending on whether the site is located to the north or south of the River Thames).

B.9 Objective 3e – Operational viability – site has valid Environmental Permit (I4)

B.9.1 Source: assessment of this objective is based on the permit number stated in the Environment Agency Permitting Regulations Database (Environment Agency, 2022a) and verified by receiving and reviewing the potential receiver site's Environmental Permit.

B.9.2 Scoring I4: it is a legal requirement to have a valid Environmental Permit, Exemption or MMP in place to import and use soils and stone from another third party. One of these documents must have been issued (or currently proposed/under application) such that it is in place during the construction phase to pass the initial screening assessment.

B.9.3 Scoring 3e: the score is allocated based on whether a permit has been issued, is in process or absent.

B.10 Objective 3f – Operational viability – Site has valid planning consent (I5)

B.10.1 Source: assessment of this objective is based on operator interviews and a search of the planning database of the potential receiver site's planning authority. This is verified by receiving and reviewing the potential receiver site's planning consent.

B.10.2 Scoring I5: it is a legal requirement to have a valid planning consent to effect permanent (and temporary) change to ground levels and/or site use, including operating waste sites. Planning consent must have been already granted (or currently proposed/under application) such that it is in place during the construction phase to pass the initial screening assessment.

B.10.3 **Scoring 3f:** the score is allocated based on whether a planning consent has been issued, is in process or absent.

B.11 Objective 3g – Operational viability – site location: proximity principle (I6)

B.11.1 **Source:** calculation based on the straight-line distance (km) from either the North or South Portal, to the receiver site boundary.

B.11.2 It is acknowledged that not all material will result from the North Portal or South Portal areas. However, these are considered to represent a worst case in terms of distance travelled, as the furthest locations from the road network.

B.11.3 **Scoring I6:** the screening criteria required a site to be within 20km of the Order Limits. If the receiving site is within this buffer, it passes with a green score. If a site is not within 20km but has an alternative transport option available (rail or river), it passes, scoring amber. If the site is not within 20km and only accessible by road, it scores red.

B.11.4 **Scoring 3g:** the measured distance of the site from the Project is used to allocate scores.

B.12 Objective 4a – Climate change impacts – GHG emitted through transport

B.12.1 **Source:** calculation based on a multiplication of the straight-line distance (km) from either the North or South Portal, to the receiver site boundary and the relevant carbon factor shown below (i.e. 3 to 33t HGV 100% fully laden in one direction, 0% laden on return).

B.12.2 It is acknowledged that not all material will result from the North Portal or South Portal areas. However, this is considered to represent a worst case in terms of distance travelled.

Table B.1 GHG emitted through transport

Size HGV	% laden	Carbon factor
3 to 33t	100	0.95513
	0	0.64065

Note: Information taken from: UK Government GHG Conversion Factors for Company Reporting (Department for Business, Energy and Industrial Strategy, 2021).

B.12.3 **Scoring:** this objective is scored based on the output of the calculation of kilograms of carbon dioxide equivalent.

B.13 Objective 4b – Climate change impacts – GHG emitted through handling/treatment at receiving site

- B.13.1 **Source:** assessment of this objective is based on an interview with the operator, cross-referenced with pertinent Environmental Permit and planning conditions. How will materials be managed on site prior to final placement? Does the site method require double handling, treatment, onsite transport prior to use?
- B.13.2 **Scoring:** the degree of treatment, handling and onsite transport is used to score this objective indicator.

B.14 Objective 4c – Climate change impacts – impact on flood risk at receiver site

- B.14.1 **Source:** government-issued flood maps are used to determine in which flood zone a receiver site sits (UK Government, 2019). The interview with the operator is used to understand what impacts, if any, the use of material will have on future flood risk.
- B.14.2 **Scoring:** The type of flood zone and likely impact from the use of the excavated material is used to score this objective indicator.

B.15 Objective 4d – Climate change impacts – alternative transport available (rail/river)

- B.15.1 **Source:** assessment of this objective is based on a site interview, supported by aerial mapping, and verified against pertinent Environmental Permit and planning descriptions on site access and material import.
- B.15.2 **Scoring:** this objective indicator is scored based on whether a site can receive material by alternative transport to HGV (i.e. river or rail), either directly or in proximity.

B.16 Objective 5 – Landscape effects – impact on character, quality and amenity of views

- B.16.1 **Source:** aerial imagery and mapping are cross-referenced with the planning consent and associated drawings.
- B.16.2 **Scoring:** professional judgement is used to determine if the proposed use of the material would have a beneficial or adverse visual impact on the surrounding area during use *or* in the long term. This can be influenced by, for example, proximity to residential receptors, the presence or absence of visual screens/other mitigation, the surrounding land use, the proposed end use of the site and the length of time for fill operations.

B.17 Objective 6a – Water quality effects – impact on surface water resources

- B.17.1 **Source:** aerial imagery and mapping are cross-referenced with the planning consent and associated drawings and Environmental Permit conditions to determine if there are any surface water receptors located on site or in proximity and to determine what potential impacts fill operations could have on these receptors.
- B.17.2 **Scoring:** it is assumed that those sites which have the ability to receive sand and gravel material would undertake reasonable endeavours to limit the impacts from occurring, therefore having no or negligible impact on the local rivers. Therefore, it is assumed that the receipt of sand and gravel at a site would have no or negligible impact on fluvial quality. For those sites which are available to receive Chalk, there is the potential for the liquid effluent contained within this material to enter local rivers through migration. It is assumed that those sites which have the ability to receive this Chalk material would undertake reasonable endeavours to limit this from occurring, therefore having no or negligible impact on the local rivers. For those sites which involve reclaiming land from estuaries and rivers, it is assumed that the estuaries would be impacted by the receipt of material, which by its nature cannot be mitigated. These sites are awarded a red grade.

B.18 Objective 6b – Water quality effects – impact on groundwater resources

- B.18.1 **Source:** the superficial and bedrock geology are determined using BGS data (British Geological Survey, 2019) and cross-referenced with aquifer designation maps (Natural England, 2019) to establish if there is a significant groundwater receptor at the site. An interview with the operator and the Environmental Permit conditions are used to determine the likely impact on the receptor.
- B.18.2 **Scoring:** It is assumed that those sites which have the ability to receive sand and gravel material would undertake reasonable endeavours to limit the impacts from occurring, therefore having no or negligible impact on the local groundwater. Therefore, it is assumed that the receipt of sand and gravel at a site would have no or negligible impact on groundwater quality. For those sites which are available to receive Chalk, there is the potential for the liquid effluent contained within this material to enter local rivers through migration. It is assumed that those sites which have the ability to receive this Chalk material would undertake reasonable endeavours to limit this from occurring, therefore having no or negligible impact on the local groundwater. Therefore, it is assumed that the receipt of Chalk material at a site would have no or negligible impact on groundwater quality.

B.19 Objective 7 – Biodiversity effects – effects on biodiversity receptors

- B.19.1 **Source:** Government mapping (Natural England, 2019) is used to determine the proximity of a site to a protected biodiversity receptor (e.g. Site of Special Scientific Interest, Ramsar site, Special Area of Conservation, Special Protection Area). Distance from receptors, an interview with the operator regarding the presence of any protected species on sites, and site management to mitigate biodiversity impacts, planning consent conditions and Environmental Permit conditions are used to determine the likely impact to any identified biodiversity receptors.
- B.19.2 A detailed ecological assessment or site survey is not carried out as part of the assessment.
- B.19.3 **Scoring:** where a site is more than 1km from a designated site it is assumed that the use of material at the site is likely to have negligible or no impact on the designated site.
- B.19.4 Where a permitted site is in close proximity (within 1km from the site boundary) to a designated site, it was assumed that the use of material at the site is likely to have negligible or no impact on the designated site as any impacts should be mitigated under the site's Environmental Permit.
- B.19.5 Where an unpermitted operational site or a development on a green field site is located in close proximity to designated sites, it is assumed that the construction of the new sites is likely to disrupt the designated site in the short term and a red grade is awarded.
- B.19.6 All sites whose restoration plans are intended to create new habitats (nature reserves, woodland or farmland) and would encourage biodiversity are awarded a green grade.

B.20 Objective 8 – Heritage effects – effects on heritage receptors

- B.20.1 **Source:** Government mapping (Natural England, 2019) is used to determine the proximity of a site to protected heritage receptors (e.g. Scheduled Ancient Monuments (SAMs), registered parks, gardens or battlefields). Distance from heritage receptors, an interview with the operator regarding site management to mitigate heritage impacts, and planning consent conditions, are used to determine the likely impact to any identified heritage receptors.
- B.20.2 **Scoring:** it is assumed that all sites which are located more than 1km from a SAM, registered park, garden or battlefield are likely to have a negligible impact on them. These sites are awarded an amber grade.

- B.20.3 For sites located within 1km of a SAM, registered park, garden or battlefield, professional judgement is used to award a grade based on the site's operations, permit status and the nature of the archaeological site.

Annex C Detailed assessment output

Site name	Operator	Grid reference	1. Waste hierarchy – Receiving site intention (recycle, reuse, restoration or landfill void)	2a. H&S Performance – Fatalities/prosecutions in the past five years	2b. Environmental Performance – No. environmental prosecutions	3a. Site operational – 2025-late 2030	3b. Site can receive waste – waste type acceptable	3c. Site current capacity over 100,000t/ yr and can receive % of material for recovery	3d. Rate of fill	3e. Permit	3f. Planning and consent (copies)	3g. Straight-line distance of closest Project compound to site boundary (km)	4a. GHG from transport (net emissions in kgCO ₂ equivalents)	4b. GHG from handling onsite	4c. Flood impact on the receiver site	4d. Alternative transport available	5. Landscap e effects	6a. Impact on surface water	6b. Impact on groundwater	7. Impact on biodiversity	8. Impact on heritage
Cliffe Pools (all locations)	Brett	TQ 72258 76073 South of the River Thames	Restoration of a quarry site via landfill permit (activity D1, landfill tax likely payable), with some recovery End use proposed is habitat creation and enhancement of an SSSI.	No	No	Yes – permission granted for 15 years once filling begins, therefore expect to be operational throughout construction.	Confirmed European Waste Code (EWC) 170504 accepted Inert material – Derogation 3x WAC for Selenium and total dissolved solids Can accept material that has stabilisation/solidification subject to Environment Agency agreement in advance.	Yes – 2.5 million tonnes (1.2 million m ³) is currently permitted at combined sites. While currently could accept almost 100% of total waste for disposal, only approximately 2% of site arisings could be accepted for recovery. Additional void available in future, planning consent is pending for a further 1.7 million tonnes, which would increase the recovery offering.	Alpha Lake – stockpile/ transfer up to 100,000t direct into lakes Transfer across jetty 15,000t/ day. No limits on rail transfer or road but need permit varied. Planning issue regarding road use - dialogue in process Annual limit 999,999t/ year Chalk Lake - Limit 3,000t/ day or 800,000t/ year.	EPR/ DB3203 HY EPR/ EB3103 LP	MC/ 14/ 1630 – proposed ecological and landscape enhancement of Alpha Lake and Chalk Lake. MC/ 15/ 0229 – Ecological Enhancement of RSPB Cliffe Pools Southern Lagoons through the importation of suitable material. GR/ 14/ 615 – proposed ecological and landscape enhancement of Alpha Lake and Chalk Lake.	5.1	8.1	The placement methodology at the site is specific about when and how fill materials are managed. Materials may or may not be stockpiled and redistributed by articulated dumpers to point deposit (based on quality of material, time of day and permit conditions on fill operations). Likely to be double-handled.	In Flood Zone 3, and part of site benefits from flood defences. No change of flood risk anticipated due to fill as it will be deposited below the sea level, therefore no loss of capacity – flood risk has been assessed during planning and permitting and risk accepted.	River and rail delivery options are available. Approximately 4-5 trains a day in use with plans to extend the rail line on site (up to 500m). Up to 1,500t (320m) per train, length limited by destination. Discussions between operator and Network Rail confirm rail paths available. Currently road access is restricted through planning condition, however discussions to amend are ongoing.	Located in a largely rural area. Small clusters of properties to east with screening and industrial units between. Fill operation is constructing habitat in line with management agreement with RSPB, as part of wildlife reserve below existing ground/ water level.	Yes, the site comprises a series of lakes but fill operation is designed to reduce depth and impacts are addressed in permit and specified fill methodology. Impacts are likely to be temporary and managed.	In addition to fill materials, superficial site geology (Alluvium/ Head Deposits) is designated Secondary (undifferentiated) aquifer and bedrock (chalk) geology designated Principal aquifer. The site is not located within a source protection zone (SPZ), groundwater management is addressed in the permit. Inert fill operation of chalk is unlikely to result in significant risk to groundwater.	Site is designated an SSSI/ SPA (South Thames Estuary and Marshes). The fill operations onsite are designed to protect and enhance designated status by reinforcing and maintaining historic managed flood defence (river wall) and reducing depth of lakes to improve habitat. Site management is in association with RSPB.	A scheduled monument (Cliffe Fort) located onsite. Site management plans have been adjusted to create an area of dry land in the vicinity of the fort to reinstate the setting of the monument. Site operations adjusted to prevent stockpiling in proximity
			--	0	0	++	++	--	++	0	0	+	0	-	0	+	0	0	0	++	0
Hermitage	Gallagher	TQ 72329 55937 South of the River Thames	Restoration of quarry site undertaken as recovery activity. Site not listed on HMRC landfill tax database.	No	Yes – administrative issue regarding submission of CQA report.	Anticipated to operate up to 2035.	Confirm can accept inert materials, 170504 therefore chalk, clay, sand and gravel.	Current capacity is 2 million m ³ for recovery for restoration, which is over 100% of arisings.	Annual limit 305,000t/ yr. No limits on HGVs/ day.	EPR/ EB3601 KU	TM/ 10/ 2158341 TM/ 10/ 2029	14.9	23.8	Fill requires dry compaction and subsequent surcharge.	Site in Flood Zone 1, low risk. Fill operations unlikely to change flood risk.	The site is only accessible via road.	Located in a largely rural area. Site was a mineral extraction site, previously a working farm (cattle) and woodland prior to extraction. Restoration will be to pasture and semi-natural woodland (which was removed for quarrying)	Some small surface water features (ponds) onsite. No requirements for specific surface water monitoring required, general management conditions in place.	In addition to fill materials, superficial site geology where present (Head Deposits) is designated a Secondary undifferentiated aquifer and bedrock (clay) geology designated Principal and Secondary A aquifers. Site located in SPZ 3. Site staff report location is existing limestone quarry with groundwater ingress. Groundwater management is addressed in permit. Inert fill unlikely to result in groundwater issues.	No protected sites within 1km.	No statutory heritage assets within 500m.
			+	0	-	++	++	++	++	0	0	0	-	-	0	-	0	0	0	0	0

Site name	Operator	Grid reference	1. Waste hierarchy – Receiving site intention (recycle, reuse, restoration or landfill void)	2a. H&S Performance – Fatalities/prosecutions in the past five years	2b. Environmental Performance – No. environmental prosecutions	3a. Site operational – 2025-late 2030	3b. Site can receive waste – waste type acceptable	3c. Site current capacity over 100,000t/ yr and can receive % of material for recovery	3d. Rate of fill	3e. Permit	3f. Planning and consent (copies)	3g. Straight-line distance of closest Project compound to site boundary (km)	4a. GHG from transport (net emissions in kgCO ₂ equivalents)	4b. GHG from handling onsite	4c. Flood impact on the receiver site	4d. Alternative transport available	5. Landscape effects	6a. Impact on surface water	6b. Impact on groundwater	7. Impact on biodiversity	8. Impact on heritage
Goshe ms Farm	IVL	TQ 65144 81038 North of the River Thames	Restoration Permit under application, if refused application will be made for Inert Landfill Permit.	No	No	Yes – anticipated to operate throughout construction	Restoration Permit application to be submitted to the Environment Agency. Inert materials to be used for fill with topsoil for top layer, may include peat and Alluvium.	Design proposed allows for 1 million m ³ for recovery, recovery which is over 100% of total arisings	TBC – subject to grant of Permit, however site is within the Order Limits so no need to access via road and so assume no restrictions.	TBC - subject to grant of Permit	18/ 01564/ CV	0.2	0.3	Direct tip in summer, double handling in winter.	Site in Flood Zone 1, low risk. Fill operations unlikely to change flood risk.	Jetty available for river transport. Site is within the Order Limits, therefore transport may avoid public roads.	Currently restored to ecological area, however not considered to currently form attractive landscape. Will be restored to pasture. No significant residential receptors in proximity.	A number of surface watercourses bisect the site and a wildlife pond. No significant impacts anticipated assuming similar operation to adjacent IVL site.	In addition to fill materials, superficial site geology (Alluvium, peat) is designated a Secondary undifferentiated aquifer and bedrock (chalk) geology designated a Principal aquifer. Parts of the site are in SPZ 3. No significant impacts anticipated assuming similar operation to adjacent IVL site.	Adjacent riverbank is functionally linked to an SSSI (Thames Estuary and Marshes). Site staff report protected species are present in and around site and translocation (where required) is in progress under Ecological Management Plan.	Closest statutory asset is approximately 800m north-east (WWII Anti-Aircraft Battery). Unlikely to be impacted by site operations.
			+	0	0	+	++	++	++	0	0	++	+	-	0	+	+	0	0	0	0
Ockendon	Veolia	TQ 60994 83666 North of the River Thames	Permitted as landfill (D1, landfill tax payable), however cover soils and additional fill needed for restoration phase. Some disposal to void is possible, assumed 40% volume is for recovery (restoration).	No	No	Intended to be operational until 2029.	Non-hazardous and inert construction wastes acceptable for fill and restoration (170504).	Available void space 3.4 million m ³ , of which 1,360,000m ³ is for recovery, representing over 100% of total arisings.	1,250,000t/ yr non-hazardous. 250,000t/ yr inert TBC - volume of waste for restoration needs confirming with the Environment Agency. No limits on HGVs/ day.	EPR/ NP3736 GU	01/ 00022/ LDC dated 03/ 02/ 2006	0.2	0.3	Direct tip in summer, double handling in winter.	Adjacent to Floodplain 3. Fill operations unlikely to significantly impact flood risk to area.	No – however on Project route so access to public road may not be required.	Following completion of fill, intention to restore site to ecological habitat. No significant residential receptors in proximity.	Site bordered to the north by surface watercourse, onsite pond which would be filled. Surface water monitoring and reporting undertaken. Impacts are likely to be temporary and managed.	Aside from fill materials, no superficial geology is recorded in the area. The bedrock (sand, gravel, clay and silt) geology designated unproductive. Site is not located within SPZ, groundwater management is addressed in permit.	No protected sites within 1km.	Adjacent to scheduled monuments (Roman Barrow and Gatehouse and moat of South Ockendon Old Hall). Site operations not completed within these assets and considered to represent low risk of harm.
			-	0	0	++	++	++	++	0	0	++	+	-	0	+	+	0	0	0	0
Pitsea	Veolia	TQ 74682 85022 North of River Thames	Permitted as landfill, however proposed operation is restoration phase (landfill tax not payable, classed as reuse).	No	No	Initially expected to operate to 2025, planning granted to extend to December 2027.	Confirm can accept inert, non-hazardous and restoration materials, 170504. Can also accept other construction wastes, e.g. concrete.	Restoration requires 500,000t (227,273m ³) which is over 100% of total arisings.	Restoration soils 500,000t/ yr 1,000t/ tide (barge). HGVs max 550 in/ out/ day (9,990t/ day).	EPR/ EP3936 GP	Planning application ESS/ 49/ 14/ BAS resolved to grant subject to a Section 106 Agreement (still to be completed).	11.5	18.4	Direct tip in summer, double handling in winter.	Site in Flood Zone 1, low risk. Site is a land raise so fill operations unlikely to change flood risk.	Jetty for import via river.	Site is a landfill due to be restored to grassland and nature conservation site to be managed by the RSPB until 2159. No significant residential receptors in close proximity.	Leachate lagoons onsite, site surrounded by series of surface watercourses. Surface water management measures and monitoring regime outlined in the permit.	Aside from fill materials, significant superficial deposits (Alluvium) and bedrock (Clay, Silt, Sand and Gravel) site geology are recorded. The aquifers are both unproductive. Site is not located within SPZ, groundwater management is addressed in permit. Site is a land raise.	Adjacent to two SSSIs (Holehaven Creek to west, Pitsea Marsh to north) Part of south-west site in SSSI Risk Zone. Site is proposed to be restored to ecological habitat.	Scheduled monument (Heavy Anti-Aircraft Gun Site) approximately 450m to the south and two Grade II listed properties 500-600m to the north. Assets unlikely to be impacted by site operations.
			+	0	0	0	++	-	++	0	0	0	0	-	0	+	+	0	0	+	0

Site name	Operator	Grid reference	1. Waste hierarchy – Receiving site intention (recycle, reuse, restoration or landfill void)	2a. H&S Performance – Fatalities/prosecutions in the past five years	2b. Environmental Performance – No. environmental prosecutions	3a. Site operational – 2025-late 2030	3b. Site can receive waste – waste type acceptable	3c. Site current capacity over 100,000t/ yr and can receive % of material for recovery	3d. Rate of fill	3e. Permit	3f. Planning and consent (copies)	3g. Straight-line distance of closest Project compound to site boundary (km)	4a. GHG from transport (net emissions in kgCO ₂ equivalents)	4b. GHG from handling onsite	4c. Flood impact on the receiver site	4d. Alternative transport available	5. Landscape effects	6a. Impact on surface water	6b. Impact on groundwater	7. Impact on biodiversity	8. Impact on heritage
Dansand Quarry	Rio Soils	TQ 65144 81038 North of River Thames	Phased restoration of mineral workings and aggregate recycling facility.	No	Site asked to provide timeline to remove stockpile of poor-quality compost – completed.	Site likely operational until 2028.	Confirm can accept inert, non-hazardous and restoration materials, 170504. Can also accept other construction wastes, e.g. concrete.	Site requires 1 million m ³ for recovery which is over 100% of total arisings.	Site can accept 300,000t/ yr and up to 108 wagons/ day (1,944t), however the site is adjacent to development boundary therefore may not need to be accessed from public highway.	EPR/ NP3696 EG	THU/ 400/ 84 – 14/ 01315/ FUL	0.2	0.3	Direct tip, bladed and vibrating roller passed to meet geotechnical parameters.	Site in Flood Zone 1, low risk. Fill operations unlikely to change flood risk.	No – however on Project route so access to public road may not be required.	Site is a Thanet Sand Quarry, with associated aggregate recycling and infill restoration. Close to residential receptors and A13 so visible. Proposed restoration to ecological habitat.	No significant surface water features are located on site. Proposed restoration plan will create some small ponds	As an extraction site, superficial geology has been replaced by fill materials, and bedrock (clay, silt and sand) geology designated Secondary A aquifer. Site is located in SPZ 3. Site operators are not aware of any groundwater ingress into site.	Site is not located within 1km of protected site. Site operators are not aware of any protected species on site. Restoration will create a variety of ecological habitats.	Site adjacent to field containing scheduled monument (Causewayed enclosure and Anglo-Saxon cemetery 500m east-north-east of Heath Place) and adjacent to Grade II listed property. Unlikely to be impacted by site operations (the Grade II listed building has been compulsory purchased).
			+	0	-	+	++	++	++	0	0	++	+	-	0	+	-	+	0	+	0
Rainham Marshes	Land and Water	TQ 52810 80730 North of River Thames	Restoration and landfill void (D1), volume is used for recovery (restoration).	No	No	Yes, anticipated to operate throughout construction (post 2030)	Dredgings 170506 and inert fill, non-hazardous soils. Confirm can accept 170504 and could take multiple ground types.	Site requires 3.3 million m ³ , of which 2,310,000m ³ is required for recovery (this is over 100% of total arisings).	Annual maximum import 350,000t/ yr (permit), 4,000t/ day (barge). Application submitted for 750,000t in progress. 4,000t/ day (barge).	EPR/ FB3701 XY	Planning permission P2076.17 from Havering Borough Council.	14.3	22.8	Preference for direct tip, e.g. in summer, double handling in winter and permit allows drying area.	Site in Flood Zone 1, low risk. Site is a land raise so fill operations unlikely to change flood risk.	Yes – jetty for import via river.	Currently a historic dredging landfill/ SSSI considered by Natural England to be in decline. Reuse will create improvements to habitat. Few residential areas in vicinity.	Series of lagoons and surface water features, restoration designed to partially infill and engineer new features as part of restoration plan and habitat creation. Surface water management addressed in permit	In addition to fill materials, superficial site geology (Alluvium) is designated a Secondary undifferentiated aquifer and bedrock (Sand, Silt and Clay) geology designated Secondary A and Principal aquifers. Site is not located within SPZ, groundwater management is addressed in permit.	Site is designated SSSI (Inner Thames Marshes) but classed as failing. Restoration required to improve. Site required to operate to management agreement as creating new habitat.	Several Grade II listed assets approximately 600-800m north. Assets unlikely to be impacted by site operations.
			+	0	0	++	++	++	++	0	0	0	-	-	0	+	-	0	0	++	0
Ebbsfleet Development Site	EDC	TQ 62094 73748 South of River Thames	Partial fill of quarry to create development platform as part of restoration.	TBC – operator not appointed yet, assumes tender will require fit and proper person clause.	TBC – operator not appointed yet, assumes tender will require fit and proper person clause.	Yes – anticipated to operate throughout construction (until at least 2030).	Seeking to accept chalk to backfill chalk quarry.	Site requires approximately 1.2 million m ³ to fill as recovery, which is over 100% of total arisings.	The Project manager has indicated they could accept up to 2,000m ³ (4,500t) a day, pending planning permission.	TBC – MMP proposed to be used.	TBC – once granted, although it is noted that EDC is the Applicant and planning authority for this scheme.	5.8	9.3	Direct transfer to lake for fill, with blade dozing to level. No surcharging or additional treatment proposed. Compaction likely to be required.	Site is in Flood Zone 3, benefiting from flood defences. Fill operations unlikely to change flood risk. Rate of fill has been calculated	The site is only accessible via road.	The site is currently a flooded quarry used as a fishery up to 15m in depth. The site is overgrown and subject to fly tipping. It is	The site is a very deep flooded quarry. The backfill would partially infill some of the feature, but retain some open water. Sampling has shown the water is	There are no superficial deposits. Bedrock (chalk) geology designated a Principal aquifer. The site is located in SPZ 1. Fill rate to be managed to avoid	The site is located approximately 650m to the east of a SSSI Bakers Hole (unfavourable, declining condition). Fill is unlikely to have significant impact on	The site is located approximately 180m to the north of a Neolithic scheduled monument and approximately 360m south of a number Grade II

Site name	Operator	Grid reference	1. Waste hierarchy – Receiving site intention (recycle, reuse, restoration or landfill void)	2a. H&S Performance – Fatalities/prosecutions in the past five years	2b. Environmental Performance – No. environmental prosecutions	3a. Site operational – 2025-late 2030	3b. Site can receive waste – waste type acceptable	3c. Site current capacity over 100,000t/ yr and can receive % of material for recovery	3d. Rate of fill	3e. Permit	3f. Planning and consent (copies)	3g. Straight-line distance of closest Project compound to site boundary (km)	4a. GHG from transport (net emissions in kgCO ₂ equivalents)	4b. GHG from handling onsite	4c. Flood impact on the receiver site	4d. Alternative transport available	5. Landscape effects	6a. Impact on surface water	6b. Impact on groundwater	7. Impact on biodiversity	8. Impact on heritage
															to avoid causing groundwater flooding from displacement.	considered that the development would be an improvement.	saline and anoxic at depth. Backfill with solid inert material and drainage installed as part of the development mean this is unlikely to cause significant detriment to surface water feature.	groundwater flooding. Backfill with solid inert material complying with reuse criteria based on groundwater risk assessment is unlikely to cause significant detriment to groundwater resources.	protected site. Ecological reports indicate partial backfill of quarry is likely to improve ecological setting by reducing water depth, thus facilitating greater habitat (e.g. wetlands) and species diversity. The site is over 1ha in size.	listed buildings. Assets unlikely to be impacted by site operations.	
			+	0	0	+	0	++	++	0	0	+	0	-	0	-	0	0	0	+	0

* This site is an inert landfill, however at some point it is anticipated that the site would require restoration. Therefore, excavated material generated from the Project could be used as restoration material.

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Registered office Bridge House, 1 Walnut Tree Close, Guildford GU1 4LZ

National Highways Company Limited registered in England and Wales number 09346363