

Gravesham Borough Council
Development Control
Civic Centre Windmill Street
Gravesend
Kent
DA12 1AU

Our ref: KT/2024/131375/01-L01
Your ref: 20231313
Date: 23 February 2024

Dear Rebecca

Proposed construction of a new cable tunnel beneath the river Thames between Tilbury and Gravesend to provide additional transmission capacity. above-ground infrastructure in the form of a new cable sealing end compound and a new head house building along with associated electricity infrastructure, access, parking, boundary treatment and two overhead gantry structures for future overhead lines. temporary compound for the duration of the project to provide parking, staff welfare facilities

Land To The South Of National Grids Electrical Substation For New Cable Tunnel Fort Road, Tilbury, Essex

Thank you for your consultation dated 25 January 2024. We have inspected the application as submitted and we **object** unless the Flood Risk matters highlighted in our response can be adequately addressed.

Should our objection be overcome, we would request that the conditions, detailed in this response, that relate to the Interaction of the Development with Flood Defences Land Contamination, Ecology and Foul Drainage be appended to the future planning permission.

We have also included information in relation to Environmental Permitting and Waste Management. Further information is provided for the applicant via an appendix at the end of the letter.

Flood Risk

Our maps show the site lies within tidal Flood Zone 3a, defined by the 'Planning Practice Guidance: Flood Risk and Coastal Change' as having a high probability of flooding. The proposal is for the construction of a new cable tunnel beneath the River Thames between Tilbury and Gravesend to provide additional transmission capacity. Above-ground infrastructure in the form of a new Cable Sealing End compound and a new head house building along with associated electricity infrastructure, access, parking, boundary treatment and two overhead gantry structures for future overhead

lines. Temporary compound for the duration of the project to provide parking, staff welfare facilities, which is classified as an 'essential infrastructure' development, as defined in [Annex 3:Flood Vulnerability classification](#) of the Planning Practice Guidance (PPG). Therefore, to comply with national policy the application is required to pass the Sequential and Exception Tests and be supported by a site-specific Flood Risk Assessment (FRA).

The Planning Practice Guidance: Flood Risk and Coastal Change is clear that in Flood Zone 3a essential infrastructure should be designed and constructed to remain operational and safe in times of flood. We have reviewed the submitted flood risk assessment (FRA), prepared by BakerHicks, referenced 30003364-BHK-XX-XX-RA-C-02002_FLOOD RISK ASSESSMENT and dated 20 September 2023, and consider it does not comply with the requirements set out in the Planning Practice Guidance, Flood Risk and Coastal Change, Reference IDs: 7-020-20220825 to 7-022-20220825. It does not, therefore, provide a suitable basis for assessment to be made of the flood risks arising from the proposed development. In particular, the submitted FRA should consider the following:

The FRA discusses breach but does not provide any data on the possible flood depths on site following a breach of the defences. Details of possible flood depths and hazards across the site should be provided for the 0.5% and 0.1% flood events inclusive of climate change. Once this risk has been established the FRA should detail how the flood risk shall be mitigated for. As stated above, the PPG is clear that developments such as this should be designed to remain operational during a flood event. It is therefore important that the FRA discusses mitigation measures which will ensure the development can continue to operate during flood events.

The flood risk to the site following overtopping of the defences has not been provided as the FRA discusses that defences may be raised in line with climate change based upon the TE2100 plan. It should be noted that the TE2100 Plan is an aspirational document, rather than a definitive policy, so whether the defences are raised in the future will be dependent on a cost benefit analysis and the required funding becoming available. If the defences can be raised, the proposed development will be protected from flooding during the 1 in 1000 annual probability event in line with climate change. If defences are not raised, then the FRA confirms crest levels of 6.49mAOD, which would be exceeded in the 0.5% and 0.1% annual probability flood events when considering the impact of climate change. The FRA should consider what the flood risk associated with this possibility could be to ensure appropriate measures can be put in place allowing for the long-term operation of the proposed infrastructure.

When determining the safety of the proposed development, you should take this uncertainty over the future flood defences and level of flood protection into account. This may require consideration of whether obtaining the funds necessary to enable the defences to be raised in line with climate change is achievable. For developments such as this, which are required to remain operational during a flood, mitigation measures should be in place to ensure this is the case.

The FRA discusses the possibility of building defences 0.3m above available levels, but as breach and overtopping levels are not provided within the FRA, it is not clear

what level this infrastructure protection should be built to. The actual level of proposed additional protection at the site should be confirmed within the FRA. The FRA proposes these measures could be added in the future, but in the case of an overtopping or breach event, there may not be sufficient warning to ensure defences are put in place and a more permanent, fixed solution, should be considered.

Overcoming our objection

The applicant can overcome our objection by submitting an FRA that covers the deficiencies highlighted above and demonstrates that the development will be safe and not increase risk elsewhere. If this cannot be achieved, we are likely to maintain our objection to the application. Production of an FRA will not in itself result in the removal of an objection.

We ask to be re-consulted with the results of the FRA. We will provide you with bespoke comments within 21 days of receiving formal re-consultation. Our objection will be maintained until an adequate FRA has been submitted.

If you are minded to approve the application contrary to this advice, we request that you contact us to allow further discussion and/or representations from us in line with the [Town and Country Planning \(Consultation\) \(England\) Direction 2009](#).

Other Sources of Flooding

In addition to the above flood risk, the site may be within an area at risk of flooding from surface water, reservoirs, sewer and/or groundwater. We have not considered these risks in any detail, but you should ensure these risks are all considered fully before determining the application.

Environmental Permitting Regulations – Flood Risk Activities

The applicant may need an environmental permit for flood risk activities if they want to do work in, under, over or within 8 metres (m) from a fluvial main river and from any flood defence structure or culvert or 16m from a tidal main river and from any flood defence structure or culvert.

Application forms and further information can be found at: <https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>. Anyone carrying out these activities without a permit where one is required, is breaking the law.

The FRA states that the Gravesend part of the development site is adjacent to an ordinary water course, but this is incorrect as the river around the site is part of the Medway and is classified as a main river.

Thames Estuary 2100 Plan – Future Thames Flood Barrier

We expect the Thames Barrier to continue to protect London from tidal flooding up until 2070. Over the longer term, the Thames Estuary 2100 Plan ([the Plan](#)) sets out several options for managing tidal flood risk, including improving the existing barrier, creating flood storage areas or building a new barrier at either Long Reach or Gravesend Reach. We are committed to working with partners to review and decide on an end of century option by 2040, to ensure that construction is completed by 2070.

The Thames Estuary 2100 Plan was designed to be adaptable to changes in the Thames Estuary and to different rates of climate change and sea level rise, so the 2040 decision date could change. It therefore remains crucial for us to plan early for future flood defence requirements, including the end of the century options within the Plan.

We need to ensure that developers and landowners acknowledge the end of the century options within the Plan, such as a new Thames barrier. Planning applications should make sufficient reference to end of the century options if they could have an impact on the proposal, in this case a new flood barrier within Gravesend Reach, during the proposals life span.

We note that section 5.9.6 of the Flood Risk Assessment (FRA) makes reference to a possible new future Thames barrier in Gravesend Reach but does not include any reference to the other end of the century options within the assessment. Section 7.2 states the project will have no impact on the future work of the TE2100 plan. However, if the decision is taken to build a new barrier within Gravesend Reach by the year 2070, then this development could impact on this essential piece of flood defence infrastructure.

We recommend the developers regularly check the Gov.uk [website](#) for up to date information on the TE2100 Plan and would welcome future discussions as decisions concerning the future Thames Barrier location are clarified.

Flood Defences

The construction of the tunnel may not result in any settlement to the tidal defences on the North Bank of the Thames Estuary. This is because these defences have already experienced significant settlement and are now at their minimum permissible level. The applicant will be required to monitor the defences for movement and make good any settlement that may result from construction of the tunnel.

During the development of the project adequate space must be provided for the inspection and if needed the maintenance of main river watercourses and flood

defences adjacent to the site. This appears to be covered on the plans in the project description document and would also be covered by Environmental Permitting.

Provided our Flood Risk Objection can be overcome, we would request the following condition be applied to any future planning permission in regards to flood defences.

Condition 1

Pre and post development surveys are undertaken in regards to the flood defences on the northern shore of the development site.

Reason for condition 1

To ensure that the structure of the flood defences are not impacted upon by the proposed work and the level of flood defence protection they provide is maintained. Any damage caused by the development should be repaired at the developers cost.

Contaminated Land

Environmental setting

This site is located above Secondary (undifferentiated) and Principal Aquifers (Alluvium and Chalk respectively) and the application overlies Water Framework Directive groundwater body. The site is considered to be of moderate environmental sensitivity. The historic and future use could present potential pollutant linkages to controlled waters. Consideration for the risk posed by piling will need to be undertaken.

The previous use of the proposed development site, on the South bank, as military training ground and rifle range presents a medium risk of contamination that could be mobilised during construction to pollute controlled waters. The construction phase of the development presents a medium/high risk to groundwater through the development of a deep shaft and the use of piling methods during the construction of this shaft. Tunnelling and associated excavation and piling works can result in risks to potable supplies from, for example, pollution/turbidity, risk of mobilising contamination, drilling through different aquifers and creating preferential pathways. Construction of the tunnel through the use of a Tunnel Boring Machine poses a potential risk to groundwater should additives be required and the potential leaking of any components during the tunneling phase.

Prior to the commencement of any works on site we would expect the developer to produce sufficient documentation to suitably outline that the risks posed to groundwater from the proposed development have been identified and can be

suitably managed. We would consider the inclusion of mitigation measures associated with potential Land Contamination and the provision of groundwater monitoring to be included within a detailed Construction Environmental Management Plan (CEMP) and associated appendices. Any further documents provided should include suitable risk assessments and mitigation measures to ensure that any potential impact is identified and that suitable measures are in place to prevent further contamination. We would also consider groundwater monitoring to be required pre- during and post-construction to suitably monitor the potential impacts of the development on the underlying groundwater relative to suitable baseline data. Should any drilling additives be required during any phase of the development a list of proposed additives and relevant information should be supplied to the Local Authority and us prior to their use within the development.

From review of the relevant chapters of the Environmental Statement and it is noted that numerous documents are to be provided at the detailed design stage, including, but not limited to; a detailed CEMP, Construction Groundwater Control Strategy, Materials Management Plan, Detailed Drainage Plan, Piling Risk Assessment and Incident Response Plan. This is acceptable in principle, however, these should be submitted and approved by the relevant Local Authority in consultation with the Environment Agency prior to the commencement of any works. We are unable to find any mention of groundwater quality monitoring within the submitted documents.

With regard to the risks posed by land affected by contamination, the application's Environmental Statement outlines that site specific Phase I Desk Studies have been produced for both the Tilbury and Gravesend site, however, these have not yet been made available for review. This document should be submitted to the Local Authority prior to the commencement of any works on site.

It is understood that no mains sewers are available within the vicinity of the site to remove surface or foul water from the proposed site during or post construction. The use of non-mains drainage solutions may pose a risk to groundwater should they not be implemented correctly or with the suitable permissions such as an appropriate permit. The use of either a 9000L cesspool or discharge to the environment via package treatment plants has been noted throughout the Environmental Statement. It is understood that a detailed Drainage Design is to be produced in the future, which should clarify which of these two options the developer is to proceed with. It should be noted that any proposed discharge of treated effluent to the environment will require a permit unless it can meet the exemption criteria outlined within the General Binding Rules ([GBR's](#)). This should be considered at an early stage within the development as a permit may not be considered acceptable for this site. Please note that the granting of planning permission does not guarantee an environmental permit for a sewage discharge will be granted. Surface water is understood to be discharged via a petrol interceptor to a surface water channel, this is acceptable from a groundwater quality perspective.

If planning permission is granted we would request that the following conditions related to land contamination are appended to any future planning permission. Without these conditions, the proposed development on this site poses an unacceptable risk to the environment and we would object to the application due to the risk of contamination.

Condition 2

Prior to each phase of development approved by this planning permission no development / No development approved by this planning permission (or such other date or stage in development as may be agreed in writing with the Local Planning Authority), shall take place until a scheme that includes the following components to deal with the risks associated with contamination of the site shall each be submitted to and approved, in writing, by the local planning authority:

- 1) A preliminary risk assessment which has identified:
 - all previous uses
 - potential contaminants associated with those uses
 - a conceptual model of the site indicating sources, pathways and receptors potentially unacceptable risks arising from contamination at the site.
- 2) A site investigation scheme, based on (1) to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site.
- 3) The results of the site investigation and detailed risk assessment referred to in (2) and, based on these, an options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken.
- 4) A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in the remediation strategy in (3) are complete and identifying any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action.

Any changes to these components require the express written consent of the local planning authority. The scheme shall be implemented as approved.

Advice to LPA

This condition has been recommended as we are satisfied that there are generic remedial options available to deal with the risks to controlled waters posed by contamination at this site. However, further details will be required in order to ensure that risks are appropriately addressed prior to development commencing.

The Local Planning Authority must decide whether to obtain such information prior to determining the application or as a condition of the permission. Should the Local Planning Authority decide to obtain the necessary information under condition we would request that this condition is applied.

Condition 3

No occupation of any part of the permitted development / of each phase of development shall take place until a verification report demonstrating completion of works set out in the approved remediation strategy and the effectiveness of the remediation shall be submitted to and approved, in writing, by the local planning

authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met. It shall also include any plan (a "long-term monitoring and maintenance plan") for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action, as identified in the verification plan. The long-term monitoring and maintenance plan shall be implemented as approved.

Condition 4

No development should take place until a long-term monitoring and maintenance plan in respect of contamination including a timetable of monitoring and submission of reports to the Local Planning Authority, shall be submitted to and approved in writing by the Local Planning Authority. Reports as specified in the approved plan, including details of any necessary contingency action arising from the monitoring, shall be submitted to and approved in writing by the Local Planning Authority. Any necessary contingency measures shall be carried out in accordance with the details in the approved reports. On completion of the monitoring specified in the plan a final report demonstrating that all long-term remediation works have been carried out and confirming that remedial targets have been achieved shall be submitted to and approved in writing by the Local Planning Authority.

Condition 5

If, during development, contamination not previously identified is found to be present at the site then no further development (unless otherwise agreed in writing with the local planning authority) shall be carried out until the developer has submitted a remediation strategy to the local planning authority detailing how this unsuspected contamination shall be dealt with and obtained written approval from the local planning authority. The remediation strategy shall be implemented as approved.

Reasons for Conditions 2, 3, 4 and 5

To protect and prevent the pollution of the water environment (particularly the Secondary (undifferentiated) and Principal aquifers) from potential pollutants associated with current and previous land uses in line with National Planning Policy Framework (NPPF 2023; paragraphs 180, 189 and 190), EU Water Framework Directive, Anglian River Basin Management Plan and Environment Agency Groundwater Protection Position Statements (2017) A4 – A6, J1 – J7 and N7.

Condition 6

The development hereby permitted may not commence until such time as a Detailed Construction Environmental Management Plan (CEMP) and all associated appendices has been submitted to, and approved in writing by, the Environment Agency and Local Authority.

Reasons for Condition 6

To ensure that the proposed development, including tunnel shafts and the boring of

the tunnel, does not harm the water environment in line with National Planning Policy Framework (NPPF 2023; paragraph 180).

Condition 7

Piling and tunnel shaft construction using penetrative methods shall not be permitted other than with the express written consent of the Local Planning Authority, which may be given for those parts of the site where it has been demonstrated that there is no resultant unacceptable risk to groundwater. The development shall be carried out in accordance with the approved details.

<http://webarchive.nationalarchives.gov.uk/20140328084622/http://cdn.environment-agency.gov.uk/scho0501bitt-e-e.pdf>

Reasons for Condition 7

Piling or other penetrative ground improvement methods can increase the risk to the water environment by introducing preferential pathways for the movement of contamination into the underlying aquifer and/or impacting surface water quality.

For development involving piling or other penetrative ground improvement methods on a site potentially affected by contamination, where aquifer units are connected or where groundwater is present at a shallow depth, a suitable Foundation Works Risk Assessment based on the results of the site investigation and any remediation should be undertaken. This assessment should underpin the choice of founding technique and any mitigation measures employed, to ensure the process does not cause, or create preferential pathways for, the movement of contamination into the underlying aquifer, or impacting surface water quality.

Condition 8

The development hereby permitted shall not commence until a groundwater monitoring and maintenance plan in respect of contamination, including a timetable of monitoring (pre-, during and post-construction) and submission of reports to the local planning authority, has been submitted to, and approved in writing by, the local planning authority. Reports as specified in the approved plan, including details of any necessary contingency action arising from the monitoring, shall be submitted to, and approved in writing by, the local planning authority.

Reason for Condition 8

To ensure that the site does not pose any further risk to the water environment by managing any ongoing contamination issues and completing all necessary long-term remediation measures. This is in line with paragraph 180 of the National Planning Policy Framework.

We have provided further information regarding contamination in an appendix at the end of this letter.

Waste Water Management

The drainage management plan identifies that 'Discharge consents will be required for surface water discharges' We recommend that the applicant uses the pre-application service for advice on proposed discharges. Get advice before you apply for an environmental permit - GOV.UK (www.gov.uk) General guidance on applying for water discharge environmental permits can be found at: Discharges to surface water and groundwater: environmental permits - GOV.UK (www.gov.uk)

The applicant indicates a package treatment plant may be used as an alternative to a cess pit. The applicant should refer to guidance above if a package treatment plant is installed. The applicant should confirm if the seepage water which is proposed to be discharged will be saline, if this is the case, impacts relating to effects on the chemistry of the receiving watercourse need to be considered. We would request the condition below, related to wastewater is appended to any future planning permission.

Condition 9

No development shall commence until a strategy to deal with foul water drainage is submitted to, and approved in writing by, the local planning authority.

Reason for Condition 9

To ensure that the development does not contribute to, or is not put at unacceptable risk from, or adversely affected by, unacceptable levels of water pollution in line with paragraph 180 of the National Planning Policy Framework.

The CEMP appears to satisfactorily cover the main pollution prevention points we'd expect to see identified. General guidance can be found at Pollution prevention for businesses - GOV.UK (www.gov.uk)

Ecology

Landscape Ecological Management Plan

The construction and operational activities proposed as part of this development could have an unacceptable effect on the ecological value of the wetland habitats and ditch habitats identified at site if these are not managed effectively.

The ditch network potentially supports multiple water vole populations in varying scale; evidence suggests that it is highly relevant to consider the impacts upon both the species and habitats they utilise (both elements are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended)).

Therefore, the safeguarding recommendations proposed as outlined in the Ecological Appraisal, ES - Chapter 15: Biodiversity Gravesend and Outline Landscape and Ecological Management Plan documents should be formally adopted. It will also require an adequate buffer zone for all ditch habitats to be

retained during the operational phase as part of long-term management of the site.

In light of the above, the proposed development will be acceptable if a planning condition requiring a landscape management scheme for the ditch and wetland scrape features is included on the planning permission.

This approach is supported by paragraphs 180 and 186 of the National Planning Policy Framework (NPPF) which recognise that the planning system should conserve and enhance the environment by minimising impacts on and providing net gains for biodiversity.

If significant harm resulting from a development cannot be avoided, adequately mitigated, or as a last resort compensated for, planning permission should be refused.

Without this condition we would object to the proposal because it cannot be guaranteed that the development will not result in significant harm to water voles and associated ditch habitats nor for the newly created wetland features to be successfully established and managed for their conservation optimum.

Condition 10

No development shall take place until a Landscape Ecological Management Plan, including long-term design objectives, management responsibilities and maintenance schedules for all wetland and ditch habitats has been submitted to, and approved in writing by, the local planning authority.

The Landscape Ecological Management Plan (LEMP) shall be carried out as approved and any subsequent variations shall be agreed in writing by the local planning authority.

The LEMP shall include the following:

- details of treatment of site boundaries and/or buffers around water bodies; we request for an adequate buffer zone extent (i.e. to provide good forage and shelter for water voles) to be identified and demarked on a scaled map.
- details demonstrating how the buffer zone will be protected during development.
- Details of how any proposed footpaths, fencing, lighting, and other aspects of the development may interact with the wetland or ditch habitats; The applicant should note that artificial light spill should be directed away from ecological receptors, sensitive lighting design guidance can be accessed via the Bat Conservation Trust.
- no light spill from external artificial lighting into the watercourse or adjacent river corridor habitat. To achieve this the specifications, location and direction of external artificial lights should be such that the lighting levels within 8/5 metres of the top of bank of the watercourse are maintained at background

levels. We considers background levels to be a Lux level of 0-2.

- details of maintenance regimes; including specific treatment of the ditch buffer zone and new wetland habitats.
- details of any new wetland and ditch habitat created on-site, including any proposed planting scheme should be provided. Planting schemes should use native species, suited to the catchment character. Management responsibilities should be provided.

Reason for Condition 10

To ensure the protection of wildlife and the supporting habitat. Also, to secure opportunities for enhancing the site's nature conservation value in line with national planning policy, promoting positive conservation status for water vole in the area and to complement achievement of the proposed BNG ambition.

Opportunities to enhance ditch habitats in collaboration

The presence of water voleS also offers opportunity to further explore enhancements to the ditch habitat, however this will require working in agreement with the relevant Flood Risk Management authority. As previously stated any work within 8m of a fluvial main river may require a Flood Risk Activity Permit; much of the evidence and methods within the LEMP will be relevant to the permit determination.

We note the permit for water discharge will be applied for and Biodiversity Net Gain assessment will be developed.

Environmental Permitting Regulations – Regulated Industries

Chapter 3 Project Description, Plate 3-3 indicates that tunnelling will occur under land covered by permit reference GP3733DZ, operated by Ingrebourne Valley Ltd.

The plan indicates tunnelling will go under landfill Area A1, which contains historically deposited pulverised fuel ash (PFA) from Tilbury Power Station. This area of landfill does not have engineered containment but relies on the natural geology to protect groundwater from the deposited PFA waste.

We would seek to ensure this area of waste is not disturbed by tunnelling to maintain protection of the environment or encourage discussion with our Installations team at the earliest opportunity if it is anticipated the landfill will be impacted by the project.

Waste Management

14.7.13 Assumes that tunnel arisings will be reused in accordance with CL:AIRE. The applicant should note that only clean and uncontaminated material can be used at another site, and that it can only be used at another site without the need for treatment, and the applicant must declare through CL:AIRE and to the local

Environment Agency team the site(s) they wish to use that material at, in advance of any excavation.

The applicant must ensure that demolition wastes are suitable for reuse under CL:AIRE, otherwise they will need to be used under a relevant Waste Exemption or the applicant will need to register an appropriate Environmental Permit.

The Environmental Protection (Duty of Care) Regulations 1991 for dealing with waste materials are applicable to any off-site movements of wastes. The code of practice applies to if the applicant produce, carry, keep, dispose of, treat, import or have control of waste in England or Wales. The law requires anyone dealing with waste to keep it safe and make sure it's dealt with responsibly and only given to businesses authorised to take it.

Pollution Prevention Control

The CEMP appears to satisfactorily cover the main pollution prevention points we'd expect to see identified, unless stated previously in this letter. General guidance can be found at Pollution prevention for businesses - GOV.UK (www.gov.uk)

We trust this information is useful.

Yours Sincerely

Mr. Pat Abbott
Planning Advisor

Direct dial 0208 4748011

Direct e-mail planning.eastanglia@environment-agency.gov.uk

Technical appendix – Land Contamination

We have reviewed the following sections of the Environmental Statement, and relate to the tunnel and Northern Headhouses/shafts:

- Non-technical summary
- Chapter 1: Introduction
- Chapter 3: Project Description
- Chapter 13: Water Environment
- Appendix 3.1: Outline Construction Environmental Management Plan
- Appendix 13.1: Water Framework Directive Assessment
- Drainage Management Plan

General comments:

- Overall, we support replacement of fluid filled cables with Cross Linked polyethylene (XLPE), due to their lower inherent pollution risk.
- The Drainage Management Plan refers to PDD-100116-DDR-001 P01 Geotechnical and Geoenvironmental Desk Study, but we could not identify this document in the submitted documents. This would be required in due course to determine the risks associated with land contamination at the site.
- It is our understanding that the shaft will be sunk to approximately 34 meters below Ordnance Datum at the Tilbury end (and rising to 32 meters below Ordnance Datum at the Gravesend end) through made ground and landfill materials, then river terrace deposits/alluvium and then chalk, therefore there will be significant connectivity between the made ground and landfill materials, the Secondary (undifferentiated) aquifer and the Principal chalk aquifer. There will need to be consideration of how water quality will be protected despite this connectivity. Chalk may be fractured, exacerbating any issues in this respect.
- The applicant needs to confirm what additives are to be used in drilling, and whether a water quality monitoring program proposed. We would expect this to be provided and suggest water quality monitoring is established well in advance of works commencing to collect a baseline data set.

Chapter specific comments:

Chapter 13: Water Environment:

- 13.6.3 states that the site is greenfield. It is not, it is both a historic and authorised landfill site.
- Paragraphs 13.6.14 and 13.6.16 appear to refer to boreholes in Tilbury and Gravesend, but are both in this Tilbury report. It does not specify this in the text but should probably be removed to avoid confusion. The naming convention is also not consistent, and also refers to meters below ground level instead of against Ordnance Datum which is more useful data.

- 13.8.3 and 13.9.3 refers to spoil material but does not discuss what would be done with unsuitable spoil material, for example materials derived from the landfill at the headhouse/shaft location.
- 13.9.14 refers to sheet piling for construction. This or any other exclusion methods must consider a number of water quality and resource matters, for example any effects on abstractors, saline intrusion from the dewatering, or water quality effects of dewatering by drawing leachate by dewatering. Consider contaminants of concern from the fuel ash in the landfill, as well as the pH of groundwater in this location.

Appendix 3.1: Outline Construction Environmental Management Plan

- We are pleased to see the inclusion of Commitment H13 & H14, but also needs to be a commitment for water quality monitoring.
- We are also pleased with the inclusion of J2-J5 and J7 but note that these commitments do appear to be worded with the assumed lack of contamination, despite there being a historic and authorised landfill on the northern headhouse/shaft area. It is likely that there will be site investigation work to determine the risk to the water environment in advance of any works commencing.

We recommend that developers should:

- 1) Refer to our '[Groundwater Protection](#)' website;
- 2) Refer to our [Land Contamination: Risk Management website when dealing with land affected by contamination. This is based on CLR11 which is archived within CL:AIRE Water and Land Library \(WALL\)](#), and also includes the [Guiding Principles for Land Contamination](#) for the type of information that we require in order to assess risks to controlled waters from the site. The Local Authority can advise on risk to other receptors, for example human health;
- 3) Refer to our [Land Contamination Technical Guidance](#);
- 4) Refer to '[Position Statement on the Definition of Waste: Development Industry Code of Practice](#)';
- 5) Refer to British Standards BS 5930:1999 A2:2010 *Code of practice for site investigations* and BS10175:2011 A1: 2013 *Investigation of potentially contaminated sites – code of practice*
- 6) Refer to our '[Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination](#)' National Groundwater & Contaminated Land Centre Project NC/99/73. The selected method, including environmental mitigation measures, should be presented in a 'Foundation Works Risk Assessment Report', guidance on producing this can be found in Table 3 of '[Piling Into Contaminated Sites](#)';

7) Refer to our '[Good Practice for Decommissioning Boreholes and Wells](#)'.

8) Refer to our '[Dewatering building sites and other excavations: environmental permits](#)' guidance when temporary dewatering is proposed

Developers should check the .Gov website for Binding Rules information for small scale discharges:

<https://www.gov.uk/guidance/general-binding-rules-small-sewage-discharge-to-the-ground>

Submissions to the LPA should include all relevant information on foul drainage proposals:

<https://www.gov.uk/government/publications/foul-drainage-assessment-form-fda1>

Treated discharges to ground may require an Environmental Permit:

<https://www.gov.uk/government/publications/application-for-an-environmental-permit-part-b6-new-bespoke-water-discharge-activity-and-groundwater-point-source-activity>

Advice to applicant - Waste

If materials that are potentially waste are to be used on-site, the applicant will need to ensure they can comply with the exclusion from the Waste Framework Directive (WFD) (article 2(1) (c)) for the use of, 'uncontaminated soil and other naturally occurring material excavated in the course of construction activities, etc...' in order for the material not to be considered as waste. Meeting these criteria will mean waste permitting requirements do not apply.

Where the applicant cannot meet the criteria, they will be required to obtain the appropriate waste permit or exemption from us

A deposit of waste to land will either be a disposal or a recovery activity. The legal test for recovery is set out in Article 3(15) of WFD as:

- any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy.
- We have produced guidance on the recovery test which can be viewed at <https://www.gov.uk/guidance/waste-recovery-plans-and-permits#waste-recovery-activities>.

You can find more information on the Waste Framework Directive here:

<https://www.gov.uk/government/publications/environmental-permitting-guidance-the-waste-framework-directive>

More information on the definition of waste can be found here:

<https://www.gov.uk/government/publications/legal-definition-of-waste-guidance>

More information on the use of waste in exempt activities can be found here:

<https://www.gov.uk/government/collections/waste-exemptions-using-waste>

Non-waste activities are not regulated by us (i.e. activities carried out under the CL:ARE Code of Practice), however you will need to decide if materials meet End of Waste or By-products criteria (as defined by the WFD). The 'Is it waste' tool, allows you to make an assessment and can be found here:

<https://www.gov.uk/government/publications/isitwaste-tool-for-advice-on-the-by-products-and-end-of-waste-tests>

If you require any local advice or guidance please contact your local Environment Agency office: Essex_Waste@environment-agency.gov.uk