Rampion 2 Wind Farm

Category 6: Environmental Statement

Volume 4, Appendix 26.3: Water Framework Directive compliance assessment

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1. Introduction

1.1 Background to this Appendix

1.1.1 This Appendix has been produced to demonstrate how the assessment of the effects from Rampion 2 (the 'Proposed Development') complies with the requirements of domestic law under the Water Framework Directive (WFD) (England and Wales) Regulations 2017[1].

1.1.2 A single document to cover all aspects of WFD compliance is presented, as it has the benefit of being able to draw conclusions on WFD compliance based on the outputs of several chapters of the Environmental Statement (ES) including:

- **Chapter 6: Coastal processes, Volume 2** of the ES (Document Reference: 6.2.6);
- **Chapter 8: Fish and shellfish ecology, Volume 2** of the ES (Document Reference: 6.2.8);
- **Chapter 9: Benthic, subtidal and intertidal ecology, Volume 2** of the ES (Document Reference: 6.2.9);
- **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the ES (Document Reference: 6.2.22);
- **Chapter 24: Ground conditions, Volume 2** of the ES (Document Reference: 6.2.24);
- **Chapter 26: Water environment, Volume 2** of the ES (Document Reference: 6.2.26); and
- **Report to Inform Appropriate Assessment** (Document Reference: 5.9).

1.1.3 The Proposed Development is a Nationally Significant Infrastructure Project (NSIP), which will be authorised by a Development Consent Order (DCO). The decision will be made by the Secretary of State for Energy and Industrial Strategy, as advised by the Planning Inspectorate. Further to this, the Environment Agency is the relevant permitting authority in relation to its role in issuing Environmental Permits under the Environmental Permitting (England and Wales) Regulations 2016.

1.1.4 In England, whilst the responsibility for ensuring that the WFD is implemented lies with the Environment Agency, public bodies have a duty to 'have regard' to the objectives of the WFD in exercising their functions. In the case of the Proposed Development this includes West Sussex County Council (WSCC) – which is the Lead Local Flood Authority (LLFA) which is responsible for consenting works in Ordinary Watercourses. In addition, Natural England has responsibility for ensuring compliance with the Objectives and Measures associated with Natura

[1] The fundamental requirements of the EU Water Framework Directive (2000/60/EC) were enacted into domestic law by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017.

2000 sites (UK National Site Network), designated as Protected Areas under the WFD (see **Section 4.6**). As noted in the Planning Inspectorate Advice Note 18 (Planning Inspectorate, 2017) the 2017 WFD (England and Wales) Regulations place these duties on each public body to exercise their functions to secure compliance with the WFD and in particular with regard to relevant River Basin Management Plans (RBMPs)[2].

1.2 Structure of this Appendix

1.2.1 This WFD Compliance Assessment is structured as follows:

- **Section 1: Introduction** outlines the legislative requirements and context of the WFD in respect of the Proposed Development;
- **Section 2: Consultation** provides dialogue between Rampion Extension Development Limited (RED) and the regulatory bodies that have a responsibility of the WFD;
- **Section 3: WFD assessment methodology** provides an overview of the methodology that has been adopted in order to undertake the WFD Compliance Assessment;
- **Section 4: Screening and scoping assessment** sets out the process that has been followed to gain a better understanding of Proposed Development activities that are low risk and do not require further consideration ('scoped out') and those that require detailed assessment ('scoped in');
- **Section 5: Further assessment results** sets out the process that has been followed and outcomes of a further, detailed assessment on those relatively high-risk activities that were scoped in;
- **Section 6: Conclusions on WFD compliance** takes the outputs from **Sections 4** and **5**, and provides a statement of compliance with the objectives of the WFD;
- **Section 7: Glossary of terms and abbreviations**; and
- **Section 8: References**.

1.2.2 This appendix is also supported by the following annexes:

- **Annex A**: Baseline WFD Data;
- **Annex B**: Screening and Scoping Assessment; and
- **Annex C**: Further Assessment

[2] Planning Inspectorate Advice Note 18 (Planning Inspectorate, 2017) acknowledges that the 2017 regulations places a general duty on the Secretary of State, the Environment Agency to exercise their 'relevant functions' so as to secure compliance with the WFD. It also notes that their functions under the Planning Act 2008 are not deemed 'relevant functions' for this purpose.

1.3 Design of the Proposed Development to facilitate WFD compliance

1.3.1 As a general principle, the Proposed Development has been designed to minimise the impact to water bodies and WFD objectives; first by minimising direct contact between construction, operation and maintenance activities and surface water bodies, and second by incorporating appropriate embedded environmental measures where infrastructure has to pass over, under or through water bodies. In this way, the ultimate impact to WFD water bodies from the Proposed Development has been managed to an acceptably low level, and the Proposed Development will not therefore compromise WFD objectives. This appendix provides the evidence to demonstrate how this conclusion has been reached.

1.4 Legislative context – The Water Framework Directive

Overview

1.4.1 The WFD came into force in 2000 and was transposed into UK law in 2003. The principal aims of the WFD are to protect and improve the water environment and promote the sustainable use of water. Environmental Quality Standards (EQSs; 2008/105/EC) for priority substances were set by the daughter directive to the WFD (the EQS Directive and subsequent amendments (EQSD; 2013/39/EU) and the Groundwater Directive (2006/118/EC). The environmental objectives of the WFD and its daughter directives are to:

- prevent deterioration of aquatic ecosystems;
- protect, enhance and restore water bodies to Good status; which is based on ecology (with its supporting hydromorphological and physico-chemical factors) and chemical factors for surface water, and water quantity and chemical status for groundwater;
- comply with water related standards and objectives for environmentally protected areas established under other European Union (EU) legislation;
- progressively reduce pollution from priority substances and cease or phase out discharges of priority hazardous substances; and
- prevent or limit the input of pollutants into groundwater and reverse any significant or sustained upward trends in the concentration of any groundwater pollutant.

1.4.2 The WFD sets a default objective for all rivers, lakes, estuaries, groundwater and coastal water bodies to achieve Good status by 2027 at the latest. Where it is not possible to achieve Good status by 2027, alternative water body objectives can be set. The current (baseline) status, and the measures required to achieve the 2027 status objective are set out, for each water body, in the relevant RBMPs, as prepared by the Environment Agency every six years (Environment Agency, 2015). The first RBMPs were published in 2009 (Cycle 1), which were updated in December 2015 (Cycle 2), and with the current Cycle 3 RBMPs published in October 2022. The plans provide the baseline condition of the water environment

at the time of publication, and indicate the measures needed and timescales required to attain their target status.

Surface Waters

1.4.3 For surface water bodies (rivers, estuaries and coastal waters[3]), overall water body status has an ecological and a chemical component. Ecological status is measured on the scale of High, Good, Moderate, Poor and Bad. Chemical status is measured as Good or Fail, based on the presence or absence of priority substances which present a risk to the environment. Good ecological status (GES) is defined as a slight variation from undisturbed natural conditions, with minimal distortion arising from human activity. The ecological status of water bodies is determined by examining biological elements (such as, fish, invertebrates, plants) and a number of supporting elements and conditions, including physico-chemical (for example, metals and organic compounds), and hydromorphological (such as, depth, width, flow, and 'structure') factors. These elements are summarised in **Table 1-1.**

Table 1-1 WFD classification elements for rivers, transitional and coastal water bodies

Water Body Type	Biological	Physio-chemical and chemical	Hydromorphological
Rivers	Macrophytes Phytobenthos Benthic invertebrates Fish	Thermal conditions Dissolved oxygen Acidification Nutrients Salinity Organic pollutants Pollution by substances being discharged for example, chemicals, metals, pesticides.	Hydrological regime: • quantity and dynamics of water flow; and • connection to groundwater bodies. River continuity morphological conditions: • river depth and width variation; • structure and substrate of the river bed; and • structure of the riparian zone.
Transitional waters	Phytoplankton	Transparency Thermal	Tidal regime: • freshwater flow; and

[3] There are no lake WFD water bodies situated within the Water Environment Study Area described in **Chapter 26: Water environment, Volume 2** of the ES (Document Reference: 6.2.26), therefore these have not been considered within the assessment.

Water Body Type	Biological	Physio-chemical and chemical	Hydromorphological
	Other aquatic flora Benthic invertebrates Fish	conditions Dissolved oxygen Nutrients Salinity Pollution by substances being discharged for example, chemicals, metals, pesticides.	• wave exposure Morphological conditions: • depth variation - quantity, structure and substrate of the bed; and • structure of the intertidal zone.
Coastal waters	Phytoplankton Other aquatic flora Benthic invertebrates	Transparency Thermal conditions Dissolved oxygen Nutrients Salinity Pollution by substances being discharged for example, chemicals, metals, pesticides.	Tidal regime: freshwater flow wave exposure Morphological conditions: • depth variation - quantity, structure and substrate of the bed • structure of the intertidal zone

1.4.4 Whilst GES is defined as a slight variation from undisturbed conditions in 'natural' water bodies, surface water bodies can also be designated as artificial or heavily modified water bodies (AWBs or HMWBs). These designations apply where there has been significant human influence on the nature of the water body such that they are considered to be unable to achieve the standards required to attain GES. Instead, AWBs and HMWBs have a target to achieve Good ecological potential (GEP), which recognises their essential human use/s (for example, flood protection, navigation, water resources abstraction), whilst making sure ecology is protected and enhanced as far as possible. The ecological potential for AWBs and HMWBs is also measured on the scale High, Good, Moderate, Poor and Bad. For those ecological elements that are sensitive to the human use of the water body, status is measured based on the successful implementation of a list of mitigation measures. These measures are set in order for the sensitive ecological elements to achieve the best aquatic health that is possible without compromising the human use of the water body. Ecological elements that are not sensitive to the human use of the water body are measured in the same way and with the same standards as for natural water bodies. Similarly, the chemical status of AWBs and HMWBs is also measured and classified in the same way as for natural water bodies.

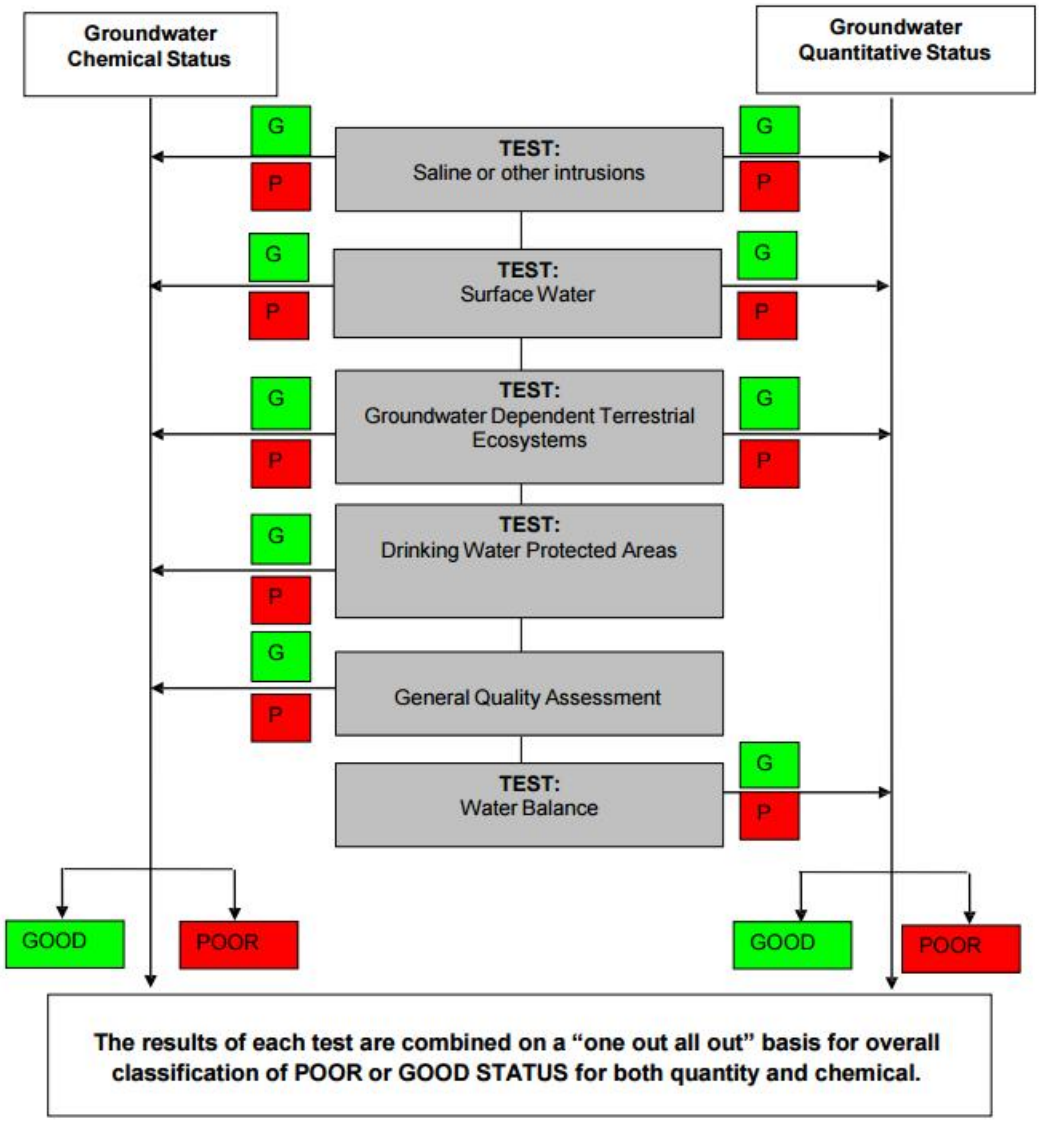
1.4.5 In order for a surface water body to attain Good 'overall' status, it must meet the requirements of GES or GEP, and achieve Good chemical status. The

achievement of Good overall status by 2027 or earlier is the default WFD objective for almost all water bodies in the UK.

Groundwater

1.4.6 For groundwater bodies, Good status has quantitative and chemical components that are assessed via a series of 'tests', as shown in **Graphic 1-1**. Together, these provide a single final classification: Good or Poor status. Quantitative status is evaluated on the basis of overall aquifer water balance, impacts of abstraction on dependent surface waters or wetlands and potential for saline intrusion. Chemical status is evaluated on the basis of evidence for impacts of poor water quality on dependent surface waters or wetlands or deterioration of the quality of groundwater used for potable supply.

Graphic 1-1 Overview of the groundwater classification elements (UKTAG, 2012)



1.4.7 Both the WFD and the GWD also require the prevention of any input of priority substances and limiting (or control) of the input of all other substances to groundwater to prevent the deterioration of groundwater body status.

Bathing Waters Directive

1.4.8 The EU's revised Bathing Water Directive (rBWD) came into force in March 2006 and replaced the 'Bathing Water Directive (BWD)' (76/1160/EEC). The rBWD provides more stringent standards than the BWD and places an emphasis on providing information to the public. The Bathing Water Directive is transposed into domestic law in England under The Bathing Water (Amendment) (England) Regulations 2018.

1.4.9 The rBWD has four different classifications of performance, these are:

- Excellent – the highest, cleanest class;
- Good – generally good water quality;
- Sufficient – the water meets minimum standards; and
- Poor – the water has not met the minimum required standards.

1.4.10 The Environment Agency measures, monitors and reports the number of certain types of bacteria which may indicate the presence of pollution, mainly from sewage or animal faeces, these are *Escherchia coli* (*E. coli*) and intestinal enterococci. An increase in the concentrations of these bacteria indicates a decrease in water quality. **Table 1-2** presents the microbiological standards for the different types of bacteria under the rBWD.

Table 1-2 rBWD classifications.

Classification	*E. Coli*		Intestinal Enterococci	
	No. per 100 ml	Percentile*	No. per 100 ml	Percentile*
Excellent	250	95	100	95
Good	500	95	200	95
Sufficient	500	90	185	90
Poor	>500	90	>185	90

1.4.11 The Environment Agency collects approximately 20 samples from each Bathing Water each year during the bathing season (15 May to 30 September in England). An overall classification for the Bathing Water is then determined by creating a distribution from the monitoring data for the last four years (4 years x 20 samples = distribution of 80 samples). A separate distribution is calculated for both *E. coli* and

intestinal enterococci. The 95th and 90th percentile values[4] from each distribution are calculated. This then enables the determination of the classification for each bacterium for the Bathing Water. Therefore, activities from Rampion 2 have the potential to affect the Bathing Water classifications for up to four bathing seasons after the proposed activities commence.

1.4.12 If the classification for both types of bacteria is different, then the overall compliance of the Bathing Water is the lowest classification achieved by either type. For example, if *E. coli* were performing at 'Good' but intestinal enterococci was performing at 'Sufficient', then the Bathing Water would be classified as performing at 'Sufficient'.

1.4.13 The status of the Bathing Waters within 2km of the offshore cable corridor part of the proposed DCO Order Limits are presented in **Annex A** of this Appendix.

[4] A percentile is a measure used in statistics indicating the value below which a given percentage of observations in a group of observations fall.

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2. Consultation

2.1.1 This Section briefly sets out the consultation and engagement comments received in relation to the WFD Compliance Assessment. The methodology described in **Section 3**, has addressed, where necessary, the issues raised. **Table 2-1** sets out the comments received in Section 5 of the Planning Inspectorate's Scoping Opinion (Planning Inspectorate, 2020) *'Aspect based scoping tables – Onshore'* and the Environment Agency's Section 42 comments in relation to the Preliminary Environmental Information Report (PEIR) (RED, 2021), and how these have been addressed in this Appendix. A full list of the Planning Inspectorate Scoping Opinion comments and responses (Planning Inspectorate, 2020) is provided in **Appendix 5.2: Response to the Scoping Opinion, Volume 4** of the ES (Document Reference: 6.4.5.2). **Table 2-1** also provides the other relevant stakeholder comments that were received in relation to the Scoping Report (RED, 2020) and the first Statutory Consultation exercise in 2021 (RED, 2021). Note that no other relevant comments were returned by stakeholders in relation to WFD Compliance Assessment during the subsequent relevant Statutory Consultations, non-statutory consultation exercise or via the Evidence Plan Process (EPP) Expert Topic Group (ETG) meetings.

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Table 2-1 Consultation responses relating to WFD Compliance Assessment

Comment Source	Comment	How this is addressed in this Appendix
Planning Inspectorate (5.9.6)	"*The Inspectorate notes that little consideration has been given to any potential effects of the Proposed Development on marine water quality specifically (only by proxy in terms of it's bearing on benthic and fish ecology, coastal processes and other relevant aspects). Paragraph 6.10.3 sets out that the study area will encompass surface water bodies (river and transitional) and groundwater bodies but not coastal bodies. The ES should include any potential impacts of the works on marine water and sediment quality, particularly with regard to the two designated in proximity of the proposed cable corridor and landfall site (including cross reference to any standalone WFD assessment and other relevant aspect chapters of the ES). The Inspectorate has also made comments to this effect in section 4.10 of this Opinion in respect of the proposed nature conservation aspect chapter.*"	The WFD Compliance Assessment has drawn on the information provided in the ES (such as **Chapter 6: Coastal processes, Volume 2** of the ES (Document Reference: 6.2.6), **Chapter 8: Fish and shellfish ecology, Volume 2** of the ES (Document Reference: 6.2.8), **Chapter 9: Benthic, subtidal and intertidal ecology, Volume 2** of the ES (Document Reference: 6.2.9) and **Chapter 26: Water environment, Volume 2** of the ES (Document Reference: 6.2.26)) which covers numerous elements of the WFD relevant to the proposed activities, including marine water quality. This Appendix presents a standalone WFD Compliance Assessment of all potentially impacted WFD water bodies including river, transitional and coastal water bodies; which incorporates the findings and provides cross referencing to these other documents where appropriate.
Environment Agency response in the Scoping Opinion (Planning Inspectorate, 2020)	A WFD Assessment will be required for this development. The Environment Agency recommends including this as a standalone chapter in the report.	This Appendix presents a standalone WFD Compliance Assessment. This incorporates findings and provides cross referencing to other ES documents where appropriate.
Environment Agency response in the	"*The WFD Assessment should include any potential impacts of the works on marine water and sediment*	A full assessment on the potential for mobilisation of sediments (and sediment bound bacteria) to affect

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Comment Source	Comment	How this is addressed in this Appendix
Scoping Opinion (Planning Inspectorate, 2020)	*quality, particularly with regard to the two designated Bathing Waters (Middleton-on-Sea, Littlehampton) in proximity of the proposed cable corridor and landfall site. Elements of the proposed works will result in the mobilisation of sediments and associated contaminants, potentially including faecal bacteria. This presents an increased risk to bathing water quality during the bathing water season (May - September). While we* (the Environment Agency) *acknowledge that impacts on water quality from increases in suspended sediment concentrations will be temporary, even a small and temporary increase in background faecal bacterial load has the potential to impact on bathing water compliance at a designated bathing water.*"	compliance criteria for Middleton-on-Sea and Littlehampton Bathing Waters is provided in **Table C-4** of **Annex C**. A consideration of the potential for the release of contaminants in the marine environment as a result of activities associated with the Proposed Development is provided in **Table 4-4**.
Environment Agency response in the Scoping Opinion (Planning Inspectorate, 2020)	The Environment Agency advises that "*the applicant should assess even short-term effects as part of the WFD Assessment. This will be particularly relevant in the context of any activities that may give rise to increased suspended sediment concentrations in proximity to sensitive areas. Suitable evidence of no likely impact will be required for any marine works.*"	This Appendix considers the potential for both short-term and long-term effects on WFD water bodies which have a connection to the Proposed Development. A full assessment on the potential for reduction in water clarity and potential deterioration on the status of coastal and transitional water bodies is provided in **Table C-4** of **Annex C**. This assessment provides quantified evidence to provide assurance that there will be no likely impact on coastal and transitional water bodies.

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Comment Source	Comment	How this is addressed in this Appendix
Environment Agency response in the Scoping Opinion (Planning Inspectorate, 2020)	"*The WFD Assessment should follow the 'Clearing the Waters for All' guidance, which has been published on https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters*"	The assessment in this Appendix follows this guidance as acknowledged in **Section 3.2** along with other appropriate guidance documents.
Environment Agency response in the Scoping Opinion (Planning Inspectorate, 2020)	"*A WFD Assessment should comprise either:* • *an explanation of why the activity has been screened out; or* • *an explanation of why all elements have been scoped out, ideally using the scoping template; or* • *an impact assessment.*"	A scoping assessment has been completed in spreadsheet format within **Annex B** and the findings are summarised in **Section 4** of this Appendix. **Section 2** of this report sets out the process for the screening of water bodies and scoping of elements. **Annex B** provides rationale for why elements have been scoped out. The activities and water bodies scoped/screened in are taken forward for further assessment in **Section 5** of this document. **Section 4** presents the scoping of the onshore (landward of MHWS) and offshore activities which have been used to scope the WFD elements. **Table 4-4** provides a detailed explanation of which WFD elements have been scoped in (and those scoped out) for further impact assessment from the proposed offshore activities associated with the Proposed Development.
Environment Agency response in the Scoping Opinion	The Environment Agency states that "*the size and scale of the WFD Assessment should be proportional to the risk posed by the potential works, but the applicant must demonstrate that they have*	The assessment for WFD water bodies is commensurate with the risks posed by the potential works, and embedded environmental measures signposted in **Annex C** and **Section 5** of this Appendix.

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Comment Source	Comment	How this is addressed in this Appendix
(Planning Inspectorate, 2020a)	*assessed the risks and provided mitigation where necessary.*"	This approach has been carried out to demonstrate WFD compliance on the basis of the embedded environmental measures.
Environment Agency response in the Scoping Opinion (Planning Inspectorate, 2020a)	"*For water quality specifically applicants should assess impacts for activities that potentially increase suspended sediment concentrations in proximity to Bathing Waters and Shellfish Waters, including short-term effects. In order to assess the risks, an estimate of the volume of sediment disturbed during the activity is required. Sediment sampling might be required if the volume of disturbed sediment is significant, or where heavy contamination is expected. Where risks to water quality are identified, measures have to be taken to avoid or mitigate potential impacts.*"	A full assessment on the potential for mobilisation sediments (and sediment bound bacteria) on the compliance of Middleton-on-Sea and Littlehampton Bathing Waters is provided in **Table C-4** of **Annex C**. No designated Shellfish Waters have been identified within 2km of the proposed DCO Order Limits. Sediment sampling has been undertaken by RED to determine the levels of potential contamination within the offshore cable corridor. The assessment for WFD water bodies relating to onshore-based effects is presented in **Sections 26.9 to 26.11** of **Chapter 26: Water environment, Volume 2** of the ES (Document Reference 6.2.26). Details of the embedded environmental measures of relevance to this WFD Compliance Assessment are provided in **Annex C**.
Environment Agency in the Scoping Opinion (Planning Inspectorate, 2020)	The Environment Agency states that examples of mitigation should "*consider the timing of works:* *1) Work around low water to avoid stirring up any sediment into the water column;* *2) Plan activities to occur outside the bathing water season.*	**Table C-4** of **Annex C** provides an assessment of the potential effects from increased suspended sediment concentrations on bathing waters. The assessment considers the worst-case potential effects in terms of methodologies and volumes of sediment which may be disturbed. The assessment concludes that no

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Comment Source	Comment	How this is addressed in this Appendix
	Methodology also needs to be considered: *1) Land-based or marine plant;* *2) Choice of dredger e.g. backhoe dredging is less likely to increase suspended sediment concentrations than water injection dredging;* *3) Use of temporary bunds or silt curtains.*"	additional mitigation is required as no deterioration in status is anticipated.
Environment Agency response in the Scoping Opinion (Planning Inspectorate, 2020)	"*The chemical water quality risk posed by disturbing a volume of sediment will always depend on the pre-existing water quality, the levels of contaminant present in the sediment being disturbed and the potential for dilution within the receiving water body. As water bodies vary considerably in size, a significant volume for a small water body might be insignificant in a larger one. In estuaries, tidal state and freshwater flow in the context of available dilution may vary considerably, and the choice of timing of the works will be important.*"	Acknowledged. The potential for dilution and dispersion of sediment suspended from activities within the receiving water body has been quantified in **Chapter 6: Coastal processes, Volume 2** of the ES (Document Reference: 6.2.6) with the findings used to inform the WFD assessment. The worst-case tidal state, in terms of the plumes entering an estuarine environment would be on a flood tide. However, as no work (including construction) which will disturb seabed sediments are proposed in an estuarine environment when the plumes reach the mouth of the estuary they will have been subjected to vertical and lateral dispersion and so will be notable more dilute that at the location of the works. Further information is provided in **Chapter 6: Coastal processes, Volume 2** of the ES (Document Reference: 6.2.6).
Environment Agency response in the Scoping Opinion (Planning Inspectorate, 2020)	The Environment Agency states that "*onshore construction is likely to cross several watercourses that have WFD status, including the main River Arun. Therefore it will be necessary to demonstrate how this development could contribute to the*	The WFD Compliance Assessment has considered each of the WFD water bodies which have a potential hydrological connection to the onshore elements of the Proposed Development. In **Section 4** and **Annex B,** a scoping assessment identified the relevant onshore

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Comment Source	Comment	How this is addressed in this Appendix
	delivery of WFD actions on these impacted water bodies."	construction, and operation and maintenance activities which could potentially impact these WFD water bodies objectives. A further assessment is carried out in **Annex C** and the findings summarised in **Section 5.** Within each sub-section of **Section 5**, conclusions are provided on whether embedded environmental measures will help mitigate potential effects on WFD water bodies, in order to achieve compliance with respective WFD body objectives.
Environment Agency response in under Section 42	"*We are pleased to note that we agree with the screening and scoping interpretations provided and note that as regards chemical water quality further information will be provided within an impact assessment when chemical samples have been analysed. This is encouraging and gives us confidence that WFD water quality for the TRaC waters is being covered well.*"	Further investigation into chemical water quality is carried out in **Annex C** and the findings presented in **Table C-4** and **C-5**. This further analysis investigated whether the proposed works would alter the chemical status of the water body concerned, in order to ascertain WFD compliance.
Environment Agency response under Section 42	"*We would like to take the opportunity to point out that summary water body classifications were last issued formally in the 2015 RBMP, (quoted in this document) and that whilst they remain officially the classification due to not having yet being formally updated we should point out that ALL TRAC water bodies are now failing for chemistry. This information is published and in the public domain, in as much as the latest (referred to as the "2019") classification monitoring results are available online*	This advice has been considered, and the chemical analysis focused on not jeopardising the potential of water body recovery (as opposed to just deterioration of status). This is shown in **Table C-4** of **Annex C**. As the water body is already failing to achieve Good status, deterioration is not for consideration, but under the WFD Compliance Assessment the proposed works cannot interfere with the recovery of the water body to Good status. Due to the predicted negligible effects to contaminant concentration in the water column, and no

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Comment Source	Comment	How this is addressed in this Appendix
	via Open Data, but it would not be obvious, without detailed scrutiny of the individual results and deep knowledge of the classification process, that all water bodies fail."	direct use of Environmental Quality Standards Directive (EQSD) substances, the proposed works would not be expected to impact recovery for the chemical status of the water body.
Environment Agency response under Section 42	"*The applicant may wish to consult Environment Agency directly for summary chemistry classifications for the 2019 classification ahead of conducting the chemical water quality impact assessments they intend to provide for us anyway.*"	Further consultation was carried out with the Environment Agency regarding the 2019 classifications and how to incorporate the results into the chemical analysis. It was found that all water bodies are failing due to changes in the assessment procedure, rather than changes in contaminant concentrations. The chemical status of four new pollutant groups is responsible for this failure, as levels of other pollutants are comparable to previous years. Some of these new pollutant groups are considered legacy issues. Water quality data used for assessment was collated from various monitoring stations in the vicinity of the Proposed Development, across a wide range of years (detailed in **Table C-4** in **Annex C**). This has ensured that the baseline conditions for the local area were incorporated, allowing for specific conclusions to the Proposed Development to be concluded on a worst-case scenario basis.
Environment Agency response under Section 42	"*The impact assessments should use available information on pre-existing chemical baselines in the water bodies where impact assessment are carried out, and the 2019 classification exercise may provide more up to date baselines.*"	Details of current (interim) classifications from 2019 have been used for relevant water bodies. The data for contaminant concentrations in water was collated from existing datasets from Environment Agency monitoring points in the vicinity of the Proposed Development.

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Comment Source	Comment	How this is addressed in this Appendix
		This data was collected from the Water Quality Data Archive. Monitoring data was collected over a range of years, with the worst-case values being used for analysis (averaging the contaminant concentration at each monitoring point and using the highest concentration). Whilst this may not have provided the most up-to-date concentration, it did work on a realistic worst-case principle, representing an extreme in terms of impacts. As detailed in **Annex C, Table C-5**, the impacts on chemical water quality from the proposed works are anticipated to be negligible.
Environment Agency response under Section 42	"*The significance of the change is chemical status to "fail" for the applicant, is that if the water body is already failing in relation to priority or priority hazardous substances (for example) then no activity they could undertake is likely not to result in a situation where the water body still continues to fail.*"	Acknowledged. The Proposed Development is not likely to improve the status of the water body, with assessment carried out in **Annex C** and **Section 5** of this appendix to determine if the Proposed Development may impede the recovery potential and ecological objectives.
Environment Agency response under Section 42	"*In such a scenario, WFD compliance for water quality cannot be argued as activity in a water body which passes, and the activity doesn't cause a change from PASS to FAIL, since the baseline will be failing, so the activity is not going to cause an improvement to a PASS. Therefore, the applicants WFD defence argument must be somewhat more subtle; that the activity will not cause a WFD deterioration of any water quality element(s). The*	The concentrations of chemical contaminants in the water body is only predicted to increase marginally (even using values for a worst-case scenario). These potential effects from the Proposed Development are short-term, and dissolved contaminant concentrations in the water column would return to background concentrations very quickly. Detailed analysis for changes to chemical concentrations is provided in **Table C-5** of **Annex C**.

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Comment Source	Comment	How this is addressed in this Appendix
	applicant must therefore provide the rationale for the water body not "failing worse"."	
Environment Agency response under Section 42	"*With regard (to) onshore freshwater ecology, we have the following comments to make. Whilst the cable route has looked to limit the number of watercourse crossings, and the proposals for main rivers are for directional drilling below watercourses, there is still likely to be a high level of disturbance to smaller watercourses in both the Arun and Adur catchment.*" "*Whilst the WFD status for many of these is "Moderate" or "Poor" and Rampion activities are unlikely to cause direct deterioration in status there is still the possibility of impacts to fish populations during the construction phase.*" "*Mention is made of potential impacts from mobilised sediments and pollutants with regard impact to fish and other aquatic species but no acknowledgement of the potential for physical impact caused by damming and de-watering of sections of watercourse and disturbance from temporary or permanent vehicle crossings. We would expect to see as many cable crossing to be below the bed of river wherever possible to reduce this. Permits will be required for each site given the variability of habitats and species present.*"	More information has been presented in this Appendix to minimise the temporary sediment disturbance relating to open cut trenched crossings and culverted watercourse crossings. A collaborative approach has been implemented with the terrestrial ecology aspect to identify those smaller watercourses which may require additional mitigation along the onshore cable corridor. A watercourse crossing assessment has been carried out as part of **Section 22.6** in **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the ES (Document Reference 6.2.22), **Appendix 22.6: Fisheries habitat survey report** of the ES (Document Reference 6.4.22.6), and to identify potential fisheries along the onshore cable route. One watercourse crossing was identified as offering Good coarse fishery habitat near Buncton adjacent to Water Lane. This was previously identified as an open cut trenched crossing in the original PEIR (RED, 2021) however this has been altered to a trenchless crossing to minimise effects from channel disturbance at this location. Several other smaller crossings were identified as modified Chalk streams by the South Downs National Park Authority (SDNPA) and an embedded

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Comment Source	Comment	How this is addressed in this Appendix
		environmental measure (C-229) in **Table 5-1** `has been put in place for clear span bridges to minimise effects at these locations. A suite of other embedded environmental measures will be implemented to provide unintrusive ways to cross upstream of the Honeybridge Stream tributary (TC19/TC19a) to minimise potential impacts upon fish at that location. This is outlined within **Section 5.1** of this Appendix and **Chapter 26: Water environment, Volume 2** of the ES (Document Reference: 6.2.26).
Environment Agency response under Section 42	*There may be a requirement to restrict timings of works in particular locations with regard both spawning timings for coarse fish and salmonids.*	As outlined in **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the ES (Document Reference: 6.2.22), only one crossing was identified as having favourable conditions for fish spawning (near Buncton). This will be crossed by unintrusive trenchless crossing methodology. Within the walkover survey completed in April 2023, fish were identified as unlikely to be resident along the other reaches of smaller watercourses along the onshore cable corridor. Embedded environmental measure C-64 will ensure isolation works to be kept to as short a duration as possible, and screening will take place to prevent fish being drawn into the pump. Embedded environmental measure C-117 ensures that works will be programmed in early summer and autumn. Embedded

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Comment Source	Comment	How this is addressed in this Appendix
		environmental measures are outlined in **Table 5-1** within **Section 5.1** of this Appendix.
Environment Agency response under Section 42	WFD Assessment: "*De-watering activity will require suitable screening of all pumps and the ability to rescue and recover any fish encountered. Any potential loss of habitat during the construction phase will require compensation in line with Government Net Gain Targets and there are a number of proposed or ongoing Environmental Projects in both the Arun & Adur Valleys for which mitigation for Rampion 2 could be directed toward.*"	Embedded environmental measure C-64 will ensure that isolation works will be kept to as short a duration as possible, and screening will take place to prevent fish being drawn into the pump, as described in **Table 5-1**, within **Section 5.1** of this Appendix and **Annex C, Table C-7**. Information on any temporary habitat loss and biodiversity net gain is addressed within **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the ES (Document Reference 6.2.22) and **Appendix 22.15: Biodiversity Net Gain information, Volume 4** of the ES (Document Reference 6.4.22.15), accordingly.

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3. WFD assessment methodology

3.1 Structure of this assessment

3.1.1 All aspects of construction, operation and maintenance, and decommissioning of the Proposed Development have been considered in the assessment in order to determine whether each will have an effect on WFD water bodies. Accordingly, the WFD Compliance Assessment considers the following key questions:

- At the water body scale, on a non-temporary basis, will the Proposed Development result in deterioration of any of the WFD classification elements from one status class to the next, (for example, from Good to Moderate) irrespective of whether or not it results in the lowering of overall status?
- Will the Proposed Development prevent any water bodies from achieving Good overall status or, where relevant, an alternate objective?
- Will the Proposed Development contribute towards a cumulative deterioration of WFD status (in combination with other projects) or prevent the cumulative enhancement of status (up to 2027)?
- Will the Proposed Development compromise the achievement of the WFD objectives in multiple water bodies that are hydrologically linked?
- Can the Proposed Development assist in the delivery of any measures, as published in the RBMP, required to achieve water body objectives?

3.2 Available guidance

3.2.1 The principal source of relevant guidance on WFD Compliance Assessment in England is the Environment Agency. At present the only publicly available guidance is Environment Agency (2017) *Clearing the Waters for All*, which relates specifically to activities in estuarine and coastal water bodies up to one nautical mile out to sea. This guidance interprets the 'no deterioration criterion' as applying to each supporting WFD element as well as the overall status classification of the water body. This is supported by the Weser Case[5] which ruled (at a European level) that this was true for all WFD water bodies. So, for example, a deterioration in the quality of macrophytes in a river water body from Good to Moderate status would be classed as deterioration irrespective of whether this caused the overall water body status to be lowered.

3.2.2 Furthermore, the Cycle 2 RBMPs indicate that within class deterioration of any constituent element (for example, a lowering of the quality of macrophytes in a river water body that does not result in a lowering of the status of macrophytes for example, from Good to Moderate) is permissible, but should be limited as far as practicable. There are two exceptions to this: first, where the water body is at the lowest possible class (Bad ecological status/potential) where no within class deterioration is allowed and, second, elements that are at High status (with the

[5] Paloniitty, T (2016).

exception of morphology), which may be allowed to deteriorate to Good status provided a number of additional conditions are met.

3.2.3 From an overall WFD compliance perspective, the principles set out in *Clearing the Waters for All* (Environment Agency, 2017) are unlikely to change and are used as a basis for assessment of effects in the marine environment. The Environment Agency has also made available their position statement on WFD assessment of new physical works in rivers (position 488_10) (Environment Agency, 2015), which has been used, as appropriate, to assess effects on river water bodies.

3.2.4 The Environment Agency have not published any guidance on WFD Compliance Assessments of lake or groundwater bodies.

3.2.5 This WFD assessment has also been undertaken in line the guidance within Planning Inspectorate Advice Note 18 (Planning Inspectorate, 2017).

3.3 Assessment process

3.3.1 The WFD assessment considers the potential for both short-term and long-term impacts on WFD water bodies which have a connection to the Proposed Development.

3.3.2 The WFD assessment comprises the following stages:

- Stage 1: Screening;
- Stage 2: Scoping;
- Stage 3: Further assessment; followed by, if required;
- Stage 4: Identification and evaluation of measures; and
- Stage 5: Article 4.7 considerations.

Stage 1: Screening and Stage 2: Scoping

3.3.3 Certain types of proposals do not require specific applications for permission but can be undertaken under existing general powers and provisions, such as developments authorised through the General Permitted Development Order. Such proposals can be identified at the screening stage as not requiring a WFD Compliance Assessment. Furthermore, certain types of maintenance activity do not require assessment. All such activities will not require a WFD Compliance Assessment.

3.3.4 However, the Proposed Development has the potential to have effects on the water environment and it requires a DCO which must be supported by environmental information. Moreover, it is not a continuation of a previously permitted activity. Therefore, there is no doubt that a WFD Compliance Assessment is required to support applications for a DCO, Environmental Permits and potentially other permissions.

3.3.5 The focus of the screening and scoping stages is to identify component activities of the Proposed Development that have the potential to cause an impact to the WFD quality elements. Given that there are strong links between the screening

and scoping parts of the assessment process they have accordingly been considered together in **Section 4** and **Annex B**.

3.3.6 Each water body potentially affected directly or indirectly by the Proposed Development is considered. Water bodies will be screened out at this stage if it can be robustly demonstrated that there will be no impacts.

3.3.7 The screening stage includes identifying risks from the Proposed Development's activities to receptors based on the relevant (screened in) water bodies and their water quality elements. In terms of screening new physical works, the Environment Agency position 488_10 guidance (Environment Agency, 2015) provides a protocol for rapid screening of development proposals based upon the type and scale of activities that are being undertaken. A similar process is set out for scoping activities against water quality elements, based on the likelihood of potential risks posed towards WFD objectives.

3.3.8 The scoping process is based on the type and extent of activities, providing a traffic light screening and scoping outcome depending on the level of potential risk against different elements. Proposed Development activities/infrastructure types that are considered unlikely to cause any risk to the delivery of WFD objectives are given a green traffic light (screened / scoped out). Proposed Development activities / infrastructure types that are considered likely to carry a significant risk to the delivery of WFD objectives are given a red traffic light (screened/scoped in for further assessment). Proposed Development activities/infrastructure types that carry a possible risk to the delivery of WFD objectives are given an amber traffic light (screened/scoped in on precaution for further assessment). The traffic light system is consistent with the cell colouring provided with the screening/scoping outcomes in **Annex B**. The screening and scoping stages of the process do not consider the implementation of design principles and environmental measures.

Stage 3: Further assessment

3.3.9 For the activities / infrastructure types that are 'Screened in' / 'Scoped in' a further assessment is required. The aim of this is to provide a proportionate view on (i) the likelihood of a new development causing non-temporary water body-scale deterioration in WFD status and (ii) whether the development may preclude the ability of the water body to achieve its target status. Those activities / infrastructure types that are eliminated at the screening and scoping stage are not carried forward to the further assessment stage.

3.3.10 The further assessment process involves the examination of sources of potential effect, pathways by which water bodies could be affected, and consideration of effects on each WFD quality element for each WFD water body type (river, coastal, estuarine, or groundwater), considering embedded environmental measures.

Stage 4: Identification and evaluation of measures

3.3.11 Where the assessment identifies an activity which would cause a risk of non-compliance with the WFD, but which may become compliant with some form of bespoke mitigation (above and beyond the embedded design principles and environmental measures that are considered during the further assessment

stage), the mitigation required is described. Where mitigation cannot be identified that would result in WFD compliance and no suitable alternatives can be identified, the provisions of Article 4.7 of the WFD would apply (Stage 5: Article 4.7 consideration in **paragraphs 3.3.12 to 3.3.15**).

Stage 5: Article 4.7 consideration

3.3.12 Article 4.7 of the WFD allows derogation from the Directive; where its requirements are met, Member States can fail to achieve the objectives or cause a deterioration in status. It is only available subject to stringent conditions (set out in Article 4.7 of the WFD).

3.3.13 The provisions of Article 4.7 would only apply where:

- failure to meet Good groundwater status, Good Ecological Status or Good Ecological Potential or to prevent deterioration in status arises from new modifications to the physical characteristics of the water body or alteration of groundwater levels; or
- failure to prevent deterioration from High to Good overall status of a surface water body is the result of new sustainable human development activities.

3.3.14 If the further assessment concludes that the Proposed Development is not compliant with WFD requirements, documentation would be prepared to justify permitting of the development under the provisions of Article 4.7 of the WFD. This would need to demonstrate that the following conditions are met:

- all practicable mitigation has been incorporated;
- there are no significantly better environmental options;
- the Proposed Development is of overriding public interest and/or the benefits of the Proposed Development outweigh the benefits of WFD compliance; and
- the reasons for the modifications to the water body are flagged to the Environment Agency for reporting in the next RBMP.

3.3.15 The Planning Inspectorate and the Environment Agency would be responsible to deciding whether the Article 4.7 conditions have been met, should this be necessary.

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4. Screening and Scoping Assessment

4.1 The Proposed Development

4.1.1 **Annex A** in this Appendix provides baseline information for each of the relevant WFD water bodies (surface, groundwater, and protected areas), with a summary of their status and future objectives.

4.1.2 A brief overview of the development is provided here to describe the Proposed Development activities. Further details are provided in **Chapter 4: The Proposed Development, Volume 2** of the ES (Document Reference 6.2.4). An overview of the proposed DCO Order Limits is shown in **Figure 1.1, Volume 3** of the ES (Document Reference 6.3.1).

4.1.3 The Offshore Elements of the Proposed Development are situated within an area adjacent to the south and west of the existing Rampion 1 project site comprising seabed areas extending between 13km and 26km offshore (as shown on **Figure 4.1, Volume 3** of the ES (Document Reference: 6.3.4). The offshore part of the proposed DCO Order Limits comprises the following:

- an offshore array area of approximately 160km^2, which includes the WTGs, WTG foundations, offshore substations and associated foundations, and an additional area of approximately 36km^2 to accommodate marine cables;
- a marine cable link area located at the south west corner of the Rampion 1 site. For clarity, no WTGs or offshore substations will be located in the cable link area, and will be shown on the **DCO Works Plans Offshore** (Document Reference: 2.2.1);
- the Offshore Export Cable Corridor of approximately 59km^2, which will connect the offshore wind farm area to the shore. The nearest coastal settlements are Littlehampton, Worthing, Shoreham-by-Sea, Brighton, and Newhaven; and
- an area to the west of Rampion 1, which is designated a Helicopter Refuge Area (HeRA), with the purpose of addressing the lines of sight (for search and rescue) and navigational safety concerns safety concerns raised by the Marine and Coastguard Agency (MCA) during Statutory Consultation. An area to the south of Rampion 1 will also be compliant for use as a HeRA at 1nm width, but it has not been designated solely for this purpose.

4.1.4 The array Area of Search will be sufficiently distanced from areas protected under the WFD (1 nautical mile (nm) for ecological status and 12nm for chemical status) and therefore these offshore elements of the Proposed Development are not considered in this assessment.

4.1.5 The onshore elements of the Proposed Development comprise an onshore cable corridor, approximately 38.8km in length, from the proposed landfall at Climping to a new onshore substation, and from the new onshore substation to the existing National Grid Bolney substation.

4.1.6 The following permanent infrastructure, for both the offshore and onshore elements, is proposed:

- offshore export cables (up to 4 cables x 17km cable length). They are likely to have three core cables with copper or aluminium conductors and cross-linked polyethylene (XLPE) insulation, at a voltage up to 275kV. It is anticipated the cables will be laid in separate trenches and installed via either ploughing, jetting, trenching, or post-lay burial techniques;
- export cables, with up to 300,000m^2 (175,000 m^3) of rock protection;
- the offshore export cables will come ashore at landfall between Middleton-on-Sea and Littlehampton at Climping. A trenchless solution is to be used to install ducts that will house the cables under Climping beach. The ducts will run from the Transition Joint Bay (TJB), located in a field behind the beach to an offshore location. TJBs are permanent below ground infrastructure where the offshore and onshore export cables are joined.
- buried onshore export cables between landfall and the new onshore substation at Oakendene;
- buried onshore export cables between the new onshore substation at Oakendene and the existing National Grid Bolney substation;
- buried joint bay structures with associated subsurface link boxes typically located every 750m to 950m along the onshore cable corridor;
- cable clamping at appropriate locations, typically close to joint bay locations where steep downward slopes occur;
- onshore cable watercourse crossings, either trenchless (for example, horizontal directional drilling (HDD) or microtunnelling) or trenched (open cut) ;
- localised permanent access roads for construction and operational access to the new onshore substation at Oakendene;
- the new onshore substation at Oakendene, which will increase the onshore cable route voltage to the 400kV required to connect to the existing National Grid Bolney substation; and
- access to the existing National Grid Bolney substation extension will be required during construction. Following construction, access for operation and maintenance will be through the existing Bolney National Grid substation.

4.1.7 Temporary construction works will include the following works:

- up to 4,250,000m^2 of seabed within the export cable corridor will be prepared through the use of a pre-lay plough and/or subsea grab to remove boulders and other obstructions on the seabed. No sandwaves are anticipated within the offshore export cable corridor. It is anticipated that the offshore cables will be installed via either ploughing, jetting, trenching, mass flow excavation or post-lay burial techniques, depending on ground conditions along the specific cable route;
- installation of export cable ducts beneath Climping beach using trenchless techniques between the exit pits and landfall TJB;

  - up to 4 offshore HDD exit pits below the low water mark, excavated by a shallow barge;
  - the HDD will exit up to approximately 1km below the mean low water spring tide (MLWS) mark; and
  - release of up to 450m^3 of drilling mud (bentonite drilling fluid) into the marine environment.
- landfall construction including excavation of a TJB pit, trenchless crossing techniques of the offshore export cables and jointing with the onshore cable corridor;
- topsoil stripping and use of temporary construction compounds at the landfall, trenchless crossings, elsewhere along the onshore cable corridor for logistics and at the new onshore substation (**Figure 4.7 a-c, Volume 3** of the ES (Document Reference: 6.3.4));
- topsoil stripping and use of temporary construction haul road along the onshore temporary construction corridor (**Figure 4.6 a-c, Volume 3 of the ES** (Document Reference: 6.3.4) and associated temporary haul road watercourse crossings comprising a mixture of culverts and bridges. Haul road crossings will not be required where there are trenchless crossings or existing road crossings;
- onshore cable corridor watercourse crossings, which will be constructed by either trenchless (such as HDD) and open cut methods depending on the nature of the watercourse;
- excavation of four trenches and associated earthworks for installation of onshore export cabling, and excavation of joint bay pits;
- construction of the new onshore substation area including vegetation clearance, earthworks and installation of a subsurface foundations and underground services;
- drainage areas associated with the onshore cable corridor and substation construction, and localised pumping, treatment, and attenuation activities as necessary; and
- Temporary construction activities for the existing National Grid Bolney substation extension will include enabling works and construction works. Enabling works will prepare the site ahead of construction and include vegetation clearance, access road construction, installation of drainage systems, installation of a temporary construction compound, and delivery of materials, plant, machinery, and fuel.

4.1.8 The construction of onshore elements of the Proposed Development is anticipated to continue for approximately four years. The trenchless cable installation will take place in the first two years of the programme and TJB construction and jointing will take place in year three. Additional construction, commissioning, and reinstatement works will take place between years one and four, with works carried out in sections. The Proposed Development is expected to be operational for around 30 years. Maintenance of the onshore cable is expected to be minimal.

4.1.9 During the operation and maintenance phase of onshore elements of the Proposed Development, periodic testing of the onshore cable is likely to be required every two to five years, with access to the link boxes required to deliver this. Monitoring of the onshore substation will be done remotely using CCTV. Unscheduled maintenance will typically involve small number of vehicles to infrequently replace equipment.

4.1.10 Full details of the proposed maintenance works associated with the offshore elements of the Proposed Development are provided in **Chapter 4: Proposed Development, Volume 2** of the ES (Document Reference: 6.2.4). To summarise, export cables infrequently develop faults in service which are detected by the wind farm protection systems. The worst-case repair will be a de-burial of a section of cable for repair on a vessel then subsequent re-burial. Where rock protection has been applied to cables during the construction phase, this may require replenishing due to natural processes. Up to 25 percent of original protection will be replenished over its lifetime.

4.1.11 The decommissioning sequence will generally be the reverse of the construction sequence and involve similar types and numbers of vessels and equipment. The decommissioning duration of the offshore infrastructure may take the same amount of time as construction of the Proposed Development, approximately four years, although this indicative timing may reduce. The details of the proposed decommissioning process, for export cables and associated protection, will be included within the Decommissioning Plan which will be developed and updated throughout the lifetime of the Proposed Development to account for changing best practice. It is likely that equipment similar to that which is used to install the cables could be used to reverse the burial process and expose them.

4.1.12 It is anticipated that the onshore electrical cables will be left *in situ* with their cable ends cut, sealed, and left buried. The onshore substation may be used as a substation site after decommissioning of the Proposed Development or it may be upgraded for use by other renewable energy generation projects. Should the onshore substation need to be decommissioned fully, the decommissioning works are likely to be undertaken in reverse to the sequence of construction works (over less than four years) and involve similar levels of equipment.

4.1.13 A detailed description of the construction, and operation and maintenance activities and what they will entail is provided in **Chapter 4: The Proposed Development, Volume 2** (Document Reference: 6.2.4) of the ES. In this assessment, the operation and maintenance phase are taken to include any refurbishment and maintenance activities for all permanent infrastructure. A summary of the Proposed Development activities / infrastructure and the elements of their construction and maintenance that are of interest to the WFD Compliance Assessment is provided in **Table 4-1**. These elements include structural changes to water bodies through the construction of infrastructure within or adjacent to watercourse crossings. There is also the potential for changes to water quality and quantity through excavation of soil, changing surface infiltration and the creation of preferential flow paths both adjacent to water bodies and within their wider catchments. In relation to the onshore elements of the Proposed Development, and in particular during the construction phase, there is a requirement for heavy plant for the installation and maintenance of infrastructure. There is a risk of hydrocarbon leakages from heavy plant, however, the risk of leakages will be

minimised through regular maintenance and appropriate pollution prevention measures, including interceptors and oil separators (in line with the appropriate environmental measures which are detailed in **Annex C** and the **Outline Code of Construction Practice (CoCP)** (Document Reference: 7.2). Note, the term 'appropriate' used throughout for environmental measures is defined to be 'proportionate sufficient to ensure no significant effects on receptors).

Table 4-1 Proposed Development activities and the WFD

Activity / Infrastructure	Element of construction / maintenance of interest to the WFD
Offshore works	The minimum distance between the array and the coastline is 13km (approximately 24nm). Therefore, the components and activities relevant to this WFD Compliance Assessment are limited to the offshore export cables which will transfer power from the offshore substations to shore. The array will be sufficiently distanced from the areas protected by the under the WFD (1nm for ecological status and 12nm for chemical status) and therefore these activities are not considered in this assessment. The installation of the offshore export cables is likely to involve the burial of the cables below the seabed using ploughing, trenching, jetting, or mass flow excavation techniques. It is anticipated that a combination of these four methods may be used depending on seabed conditions. The maximum footprint of the installation of offshore export cables within the relevant coastal water body (see **Section 5.2**) is approximately 13.3ha (133,344m^2) based on the assumption of 1,852m (1nm) (length) x 4 cables x 12m (width of plough) x 1.5 multiplier (as required in the Clearing the Waters for All guidance (Environment Agency, 2017)). No sandwave clearance is proposed for the installation of the offshore export cables. There is no intention to knowingly release any chemicals listed in the EQSD into the environment during construction, operation and maintenance or decommissioning of the Proposed Development.
Landfall works	Up to four offshore HDD exit pits below the low water mark, excavated by a shallow barge. The HDD will start from the landfall construction compound for approximately 1km to exit below the mean low water springs (MLWS) (into these exit pits). Ducts will then be installed. The offshore export cables will then be pulled ashore through pre-installed HDD ducts between a sea barge in shallow water sections towards the TJB at the landfall at Climping.

Activity / Infrastructure	Element of construction / maintenance of interest to the WFD
	The offshore export cables will be jointed to the onshore export cables within the TJB. The TJB will comprise four pits which will be excavated into the ground, lined with concrete and then once jointing is completed, backfilled and reinstated. A temporary construction compound (approximately 120m X 100m) will be located at the landfall, used for the activities, cable pulling and construction of the TJBs. It will be set up with required storage for materials and equipment, facilities for personnel, and area for construction activities.
Onshore cable circuits	(Landfall to new onshore substation at Oakendene) Buried onshore export cables will run along the length of the onshore cable corridor from the landfall at Climping through to the new onshore substation at Oakendene. The up to 275kV cable system along the onshore cable corridor will comprise four cable circuits in separate trenches. (New onshore substation to existing National Grid Bolney substation) Buried onshore cables will subsequently run from the new onshore substation to tie into the existing National Grid Bolney substation. The 400kV cable system will comprise two cable circuits in separate trenches. Trenches will typically be 1.2m wide at the base, and 2m – 4m at the surface depending on the strength of soil. They will have a standard burial depth of 1m to the top of the duct. For the majority of the onshore cable corridor, available borehole information indicates that the ground water table is recorded well below this depth, as noted in the hydrogeology baseline section of **Chapter 26: Water environment, Volume 2** of the ES (Document Reference: 6.2.26). Most of the logs recorded levels well below 3m, especially along the central section of the onshore cable corridor associated with well drained chalk along the South Downs. The logs indicate that there are limited sections of the onshore cable corridor where the resting water level may be closer but still below the standard burial depth, within the Alluvium / River Terrace deposits within the valleys of the Arun (1.8 metres below ground level (mbgl)) and Adur (1.82mbgl). The onshore cable corridor will be constructed and backfilled with the reinstatement commenced in as short a time as practicable to limit dewatering requirements. Dewatering of excavations will be carried out in line with good practice where shallow localised groundwater is encountered (see **Annex C** for further details on measures).

Activity / Infrastructure	Element of construction / maintenance of interest to the WFD
	Trenches will be backfilled with the originally excavated material or cement bound sand. These works will be located along with temporary construction haul road works (which is described in a row below within this table) within a temporary construction corridor swathe which will typically be approximately 40m wide, or less (for example, in areas with particular constraints or to minimise impacts to sensitive sites).
Onshore cable corridor watercourse crossings – Trenchless methods (such as HDD)	Trenchless crossing methods such as HDD will be used for main watercourses, railways and roads that form part of the Strategic Highways Network, although if necessary other trenchless methodologies will be considered. Other trenchless methodologies to be considered could include auger boring and micro-tunnelling. Where the onshore cable corridor crosses an Environment Agency flood defence, trenchless methodologies will be used. The Crossings schedule details the crossings for the onshore cable corridor and can be found in **Appendix 4.1: Crossings schedule, Volume 4** of the ES (Document Reference: 6.4.4.1). Trenchless crossings will involve drilling a bore from one location to another under the crossing. Following completion of the bore the duct lengths are strung out and connected in a line of equal length to the crossing and pulled through. Each of the four circuits will have separate ducts for each cable. Where groundwater is intercepted, appropriate management and treatment of dewatering arisings will be carried out prior to discharge. During the construction phase, the process of installing a trenchless crossing will take approximately 3 to 4 months. The excavated material will consist of a mixture of the natural substrate, bentonite or clay and water (slurry). Start or exit pits for trenchless techniques will be microsited outside of the floodplain where possible (see **Annex C** for further details on measures). The configuration and design parameters of the trenchless crossings will be determined during the detailed design phase and informed by the Environmental Impact Assessment (EIA) process.
Onshore cable corridor watercourse	Open cut crossing methodology will predominantly be used for ordinary watercourses.

Activity / Infrastructure	Element of construction / maintenance of interest to the WFD
crossings – Open cut trenching methods	This will involve the preparation of the crossing (damming / fluming / pumping in the case of water courses) to allow the trenches to be excavated and ducts installed. For dry open cut watercourses and ditch crossings, a suitably sized flume pipe will be installed over the point of the proposed crossing ensuring that it extends on each side of the trenchline crossing point for a suitable distance. The flume pipe will then be bedded and packed or surrounded with soil filled sandbags to create a dam across the watercourse, so that the flume pipes take the flow. For pumping, the watercourse will be dammed with soil filled sandbags and pumps will be placed up-stream of the dam. The discharge location for the hoses will be downstream of the crossing point. The discharge hose(s) will be directed through a filtering medium to limit silt carry over or bed disturbance before the pumped water is returned to the watercourse. A section of duct will be lowered into the trench at a suitable depth beneath the bottom of the watercourse. During this period, which is likely to be less than several days in duration, there will be a temporary change in both the quantity and dynamics of flow over a distance. The upstream damming is likely to locally increase water quantity and reduce flow / velocity variability due to the impounding of flow. The extent to which these effects will propagate upstream of the dam will depend on the amount of flow within and gradient of the watercourse. The trench will be backfilled in layers and will be compacted with cement bound sand, followed by the previously excavated subsoil free of large rocks. The riverbed and banks will be reinstalled and restored to the condition they had been prior to the installation of the duct. The flume or pumps and soil bags are removed once the bed materials and bank profile has been restored to allow the watercourse to flow again. For the bank profile to be restored, geotextiles may be used in conjunction with seeding of an appropriate grass mix. Solutions such as the importation of locally sourced large stones or rocks may also be used. Any bank protection, where it is required, will be adequately keyed into both the bed and banks. Materials and methods employed will be in keeping with the surrounding environment.
Temporary construction haul road	The temporary construction haul road will enable the transportation of machinery used for topsoil stripping and subsoil excavation. This soil will be stored in bunds within a temporary construction corridor. It is anticipated that a mechanical excavator will be used for these activities.

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Activity / Infrastructure	Element of construction / maintenance of interest to the WFD
	The haul road will typically be 6m wide, and up to 10m in places (such as at passing places), with an average depth of 0.2m. Composition will be of crushed stone laid on a geotextile, or formed of interlocking panels, depending on ground conditions and the duration and type of use. The haul road will be used during installation works and construction activities and be removed prior to final site reinstatement. Existing access points and tracks have been utilised where possible. The selected number and location of these access points will be confirmed at a later stage and agreed with the relevant local authorities and landowners.
Temporary construction haul road watercourse crossings – culverts	Culverts will only be used for temporary construction haul road crossings of small ordinary watercourses and ditches. The size of a culvert will vary per crossing depending on the dimensions of the crossing, sensitivity and importance of the watercourse. The construction of culverted access track watercourse crossings will generally be achieved by localised damming of the flow upstream of the proposed crossing location, with over-pumping of water to leave a dry area in which to install the culvert. The bottom of the watercourse will be excavated to the size of the proposed foundation and lined with a geotextile separation membrane prior to pouring the concrete. The culvert will then be installed prior to the concrete being fully cured. A geotextile separation membrane will be placed on top of the ditch banks allowing backfilling to commence. This process will naturally lead to a period of localised flow regime alteration. During this period, which is likely to be less than several days in duration, there will be a temporary change in both the quantity and dynamics of flow over a limited distance downstream of each crossing. The upstream damming will be likely to locally increase water quantity and reduce flow / velocity variability due to the impounding of flow. The extent to which these effects will propagate upstream of the dam will depend on the amount of flow within and gradient of the watercourse however effects are expected to be localised.
Temporary construction haul road watercourse crossings – bridges	Where culverts are not suitable for a particular crossing due to either the sensitivity of the watercourse or engineering requirements a temporary bridge will be installed. Most bridge crossings will be of a short span and flat deck construction; however Bailey style bridges may also be used. All bridges will be clear span and the foundations will be offset back from the banks of the watercourse. The installation of each bridge will take several days.

Activity / Infrastructure	Element of construction / maintenance of interest to the WFD
Temporary construction compounds	Temporary construction compounds are required for landfall works (as noted in this table against the landfall works row above), trenchless crossings, logistics (including storage of temporary construction materials, equipment and welfare facilities) along the onshore cable corridor, and at the new onshore substation. Along the onshore cable corridor, five sites have been identified as potential temporary construction or logistic compounds. The location and number of these temporary construction compounds will be selected at a later stage in agreement with the Contractor. Temporary construction compounds will typically be approximately 2.5-6.13 hectares (ha) in size, with dimensions varying subject to the site selection. The temporary construction compounds will be constructed with topsoil excavated and replaced temporarily with a base layer of crushed stone. They will take between 3 to 4 months to prepare and will be in place for up to 3.5 years. Following completion of construction works, the temporary construction compound facilities will be removed, and each temporary construction compound site will be returned to its original state.
Onshore substation	The onshore substation is proposed to be located at Oakendene. The overall permanent site footprint for the proposed onshore substation infrastructure is anticipated to be up to up to 6ha. A temporary construction works area will be up to 2.5ha in area. Enabling works will prepare the onshore substation site ahead of construction and include vegetation clearance, access road construction, installation of drainage systems, installation of a temporary construction compound, delivery of materials, plant, machinery and fuel, and any earthworks necessary for the installation of the onshore substation foundations, trenches ducts and pits. Other relevant works include installation of underground services and onshore substation foundations, the control and switchgear buildings and plant buildings, construction of the oil containment bund; and provision of utility supplies. Construction works for the onshore substation will be carried out over a period of up to three years. The onshore substation site will then be secured and operated, whilst the temporary construction area returned to its original use and condition. New infrastructure is required at the existing National Grid Bolney substation to provide a cable connection from the proposed Oakendene substation to the existing National Grid Bolney substation as the National Grid interface location.

Activity / Infrastructure	Element of construction / maintenance of interest to the WFD
	A temporary construction compound will be required. This will be located along the temporary construction access on an area of existing hardstanding and will be approximately 3,500m^2 (0.35ha).Temporary construction activities for the existing National Grid Bolney substation extension will include enabling works and construction works. The existing National Grid Bolney substation extension will utilise concrete foundations for buildings and switchgear (both options), and piled or screwed foundations for busbar brushings.

4.2 River water bodies

4.2.1 A total of ten river water bodies have been identified for consideration in **Chapter 26: Water environment, Volume 2** of the ES (Document Reference: 6.2.26), and they are shown in relation to the Proposed Development on **Figures 26.1 and 26.2, Volume 3** of the ES (Document Reference: 6.3.26). The seven screened in river water bodies include Ryebank Rife, Black Ditch (West Sussex), Honeybridge Stream, Adur (Lockbridge), Adur East (Sakeham), Cowfold Stream, and Adur (East).

4.2.2 The screening assessment (**Annex B**) identified that there were no activities within scoping limits within the catchments of the Burpham tributary, the River Stor and Bolney sewer. On this basis, these water bodies have been screened out from further assessment in **Section 4.6**.

4.2.3 A summary of the screening conclusions for each of the identified onshore activities/infrastructure types is provided in **Table 4-2**. **Table 4-2** provides a description of the screening criteria that has been applied to screen in activities which require further assessment. The approach taken considers activities that will take place within either Flood Zone 3 or within 25m of any watercourse, should be scoped in for further assessment. Those activities that do not fit these criteria are to be compliant with the WFD, and no further assessment is necessary. **Annex B** provides details on which activities have been screened in for each of the seven river water bodies under consideration. A more detailed breakdown of the scoping of individual WFD elements is also presented in **Annex B**. The activities and elements that are screened and scoped in are considered for further assessment in **Annex C** and **Section 5**.

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Table 4-2 Screening of onshore activities / infrastructure for river water bodies

Activity / Infrastructure	Scoping criteria	Phase and scoping result	Explanation
Landfall works	Within Flood Zone 3 or <25m of any watercourse / drainage channel	Construction and decommissioning: **In**	Potential for pollutants and sediments to reach watercourses via runoff, particularly during flood conditions
		Operation and maintenance: **Out**	No permanent effects identified as temporary construction working areas including temporary construction compounds and access tracks will be removed and reinstated to their original condition after construction complete. Maintenance anticipated to be minimal for the TJB and joint bays therefore limited opportunity for effects on watercourses.
	Wider WFD water body catchment	Construction, operation and maintenance and decommissioning: **Out**	No direct pathway for construction or operation and maintenance effects to reach watercourse.
Onshore cable circuits	Within Flood Zone 3 or <25m of any watercourse / drainage channel	Construction and decommissioning: **In**	Potential for pollutant release and ground disturbance during construction of onshore cable circuits, including discharge of dewatered groundwater pumped from trenched excavations.
		Operation and maintenance: **Out**	No effects on WFD water bodies during operation of onshore cable circuits given that land will be reinstated to its original

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Activity / Infrastructure	Scoping criteria	Phase and scoping result	Explanation
			condition and there are minimal maintenance requirements.
	Wider WFD water body catchment	Construction, operation and maintenance, and decommissioning: **Out**	No direct pathway for construction effects to reach watercourse.
Onshore cable corridor watercourse crossings – Trenchless methods (such as HDD)	All trenchless onshore cable corridor watercourse crossings (including those in the Wider WFD catchment)	Construction and decommissioning: **In**	Dewatering and ground disturbance from excavations have potential for pollutants, including slurry and sediment-laden runoff to enter watercourses. Also, a potential for alterations to flow regime in receiving watercourse(s) if dewatered groundwater is discharged to the watercourse network.
	All trenchless onshore cable corridor watercourse crossings (including those in the Wider WFD catchment)	Operation and maintenance: **Out**	No effects anticipated on water bodies as all associated temporary construction working areas will be reinstated to their original condition, and the pre-installed ducts will be sufficiently buried beneath watercourses to avoid scour.
Onshore cable corridor watercourse crossings – Open cut trenching methods	All open cut onshore cable corridor watercourse crossings (including those in the Wider WFD catchment)	Construction and decommissioning: **In**	Ground disturbance from trenching and fluming / pumping will result in the potential for sediment-laden runoff and pollutants to transfer downstream along watercourses. Alteration to watercourse morphology associated with trenched underground

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Activity / Infrastructure	Scoping criteria	Phase and scoping result	Explanation
			onshore cable corridor watercourse crossings.
		Operation and maintenance: **Out**	The pre-installed ducts will be sufficiently buried beneath watercourses to avoid scour. Maintenance anticipated to be minimal for both trenched crossings therefore limited opportunity for source of effects on watercourses.
Temporary construction haul road	Within Flood Zone 3 or <25m of any watercourse / drainage channel	Construction and decommissioning: **In**	Potential for pollutant release and sediments to reach watercourses during construction of temporary construction haul road, particularly during flood conditions.
		Operation and maintenance: **Out**	No effects identified during operation and maintenance as a result of onshore elements of the Proposed Development element as temporary construction haul roads will be removed after construction complete.
	Wider WFD water body catchment	Construction, operation and maintenance, and decommissioning: **Out**	No direct pathway for construction effects to reach watercourse. No effects identified during operation as a result of the onshore elements of the Proposed Development element as temporary construction haul roads will be removed after construction complete.

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Activity / Infrastructure	Scoping criteria	Phase and scoping result	Explanation
Temporary construction haul road watercourse crossings (culverts and bridges)	All watercourse crossings	Construction and decommissioning: **In**	Potential for pollutants and sediments to reach watercourses directly from in channel and river bank changes for watercourse crossings. Alteration to watercourse morphology (from culverted haul road crossings).
		Operation and maintenance: **Out**	No effects identified during operation and maintenance as result of the onshore elements of the Proposed Development as all temporary construction haul road crossings will be removed after construction is complete.
Temporary construction compounds	Within Flood Zone 3 or <25 m of any watercourse / drainage channel	Construction and decommissioning: **In**	Potential for pollutants and sediments to reach watercourses.
		Operation and maintenance: **Out**	No effects identified as temporary construction compounds will be removed after construction.
	Wider WFD catchment	Construction, operation and maintenance, and decommissioning: **Out**	No direct pathway for construction / operation and maintenance / decommissioning effects to reach watercourses.

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Activity / Infrastructure	Scoping criteria	Phase and scoping result	Explanation
Onshore substation	Within Flood Zone 3 or <25 m of any watercourse / drainage channel	Construction and decommissioning: **In**	Dewatering and ground disturbance from excavations have potential for pollutants and sediment-laden runoff to enter watercourses.
		Operation and maintenance: **Out**	No effects anticipated on water bodies as any hardstanding surface drainage effects or pollutants are not likely to result in any measurable change to receiving watercourse flow regime and water quality.
	Wider WFD water body catchment	Construction, operation and maintenance, and decommissioning: **Out**	No direct pathway for construction / operation and maintenance / decommissioning effects to reach watercourses.

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4.3 Transitional (Estuarine) and Coastal

Onshore activities

4.3.1 Two transitional water bodies (Arun and Adur) and one coastal water body (Sussex) have been identified for consideration in this assessment in **Chapter 26: Water environment, Volume 2** of the ES (Document Reference: 6.2.26). These water bodies are presented in relation to the Proposed Development along within the ES chapter on **Figures 26.1** and **26.2, Volume 3** of the ES (Document Reference: 6.3.26). The identified water bodies either:

- have inflowing water bodies impacted by the onshore elements of the Proposed Development (for instance unnamed Arun Internal Drainage Board (IDB) ditches and two unnamed, unreportable Adur watercourse channels); or
- have onshore elements of the Proposed Development activities / infrastructure types located within / below them.

4.3.2 The majority of activities are screened in due to their proximity to unnamed ditches or watercourse crossings, and the only activities in close proximity to the transitional and coastal water body boundaries are landfall works nearby the Sussex coastal water body, and the proposed trenchless crossing of the Adur transitional water body. The onshore substation works, and temporary construction compound infrastructure types have been screened out given that are not within 25m of transitional or coastal water body boundaries or their associated ditches or unnamed watercourse channels.

4.3.3 A summary of activities screened in for detailed assessment in transitional and coastal water bodies is provided in **Table 4-3**. **Annex B** provides details on which activities have been screened in for each of the transitional water bodies and coastal water body under consideration. A more detailed breakdown of the scoping of individual WFD elements is also presented in **Annex B**. The activities and elements that are screened and scoped in are considered for further assessment in **Annex C** and **Section 5**.

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Table 4-3 Screening of onshore activities / infrastructure for Transitional (Estuarine) and Coastal water bodies

Activity / Infrastructure	Scoping criteria	Phase and scoping result	Explanation
Landfall works	Within 25m of transitional / coastal water body Boundary and unnamed channels in catchment	Construction and decommissioning: **In**	Potential for pollutants and sediments to reach watercourses via runoff, particularly during flood conditions
		Operation and maintenance: **Out**	No permanent effects identified as temporary construction working areas including temporary construction compounds and access tracks will be removed and reinstated to their original condition after construction complete. Maintenance anticipated to be minimal for the TJB therefore limited opportunity for effects on transitional / coastal water bodies.
Onshore cable circuits	Within 25m of transitional / coastal water body Boundary and unnamed channels in catchment	Construction and decommissioning: **In**	Potential for pollutant release and ground disturbance during construction of onshore cable circuits, including discharge of dewatered groundwater pumped from trenched excavations.
		Operation and maintenance: **Out**	No effects on WFD water bodies during operation of onshore cable circuits given that land will be reinstated to its original condition and there are minimal maintenance requirements.

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Activity / Infrastructure	Scoping criteria	Phase and scoping result	Explanation
Onshore cable corridor watercourse crossings – Trenchless methods (such as HDD)	Crossings, of transitional water body and unnamed tributary watercourse / drainage channels within catchment	Construction and decommissioning: **In**	Dewatering and ground disturbance from excavations have potential for pollutants, including slurry and sediment-laden runoff to enter watercourses. Also, a potential for alterations to flow regime in receiving watercourse(s) if dewatered groundwater is discharged to the transitional water body network.
	Crossings, of transitional water body and unnamed tributary watercourse / drainage channels within catchment	Operation and maintenance: **Out**	No effects anticipated on water bodies as all associated working areas will be reinstated to their original condition, and the pre-installed ducts will be sufficiently buried beneath watercourses to avoid scour.
Onshore cable corridor watercourse crossings – Open cut trenching methods	Crossings, of transitional water body and unnamed tributary watercourse / drainage channels within catchment	Construction and decommissioning: **In**	Ground disturbance from trenching and fluming / pumping will result in the potential for sediment-laden runoff and pollutants to transfer downstream to transitional water bodies. Alteration to watercourse morphology associated with trenched underground onshore cable corridor watercourse crossings.
		Operation and maintenance: **Out**	The pre-installed ducts will be sufficiently buried beneath watercourses to avoid scour. Maintenance anticipated to be minimal for both trenched crossings therefore limited

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Activity / Infrastructure	Scoping criteria	Phase and scoping result	Explanation
			opportunity for source of effects on transitional water bodies.
Temporary construction haul road	Within 25m of transitional / coastal water body Boundary and unnamed channels in catchment	Construction and decommissioning: **In**	Potential for pollutant release and sediments to reach watercourses during construction of temporary construction haul roads, particularly during flood conditions.
		Operation and maintenance: **Out**	No effects identified during operation and maintenance as result of the onshore elements of the Proposed Development element as temporary construction haul roads will be removed after construction complete.
Temporary construction haul road watercourse crossings (culverts and bridges)	Crossings, of transitional water body and unnamed tributary watercourse / drainage channels within catchment	Construction and decommissioning: **In**	Potential for pollutants and sediments to reach watercourses directly from in channel and river bank changes for watercourse crossings. Alteration to watercourse morphology (from culverted temporary construction haul road crossings).
		Operation and maintenance: **Out**	No effects identified during operation and maintenance as result of the onshore elements of the Proposed Development element as all temporary construction haul road crossings will be removed after construction complete.

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Offshore activities

Relevant water bodies and Protected Areas

4.3.4 As required by Environment Agency (2017) guidance, coastal and transitional water bodies within 2km of the offshore proposed DCO Order Limits were identified. The proposed DCO Order Limits overlaps with the Sussex coastal water body (GB640704540003) and the Arun transitional water body (GB540704105000) (**Graphics A-1** and **A-3** of **Annex A**). The current status of these water bodies is presented in **Table A-2** of **Annex A**. The Adur transitional water body is beyond the 2km from the offshore proposed DCO Order Limits and, therefore, has not been considered further for potential impacts from the proposed offshore activities.

4.3.5 As required by Environment Agency (2017) guidance, the following WFD protected areas have been considered:

- Special Areas of Conservation (SACs);
- Special Protection Areas (SPAs);
- Bathing Waters;
- Shellfish Water Protected Areas; and
- Nutrient Sensitive Waters.

4.3.6 The following sites are within 2km of the offshore cable corridor and are therefore included in this assessment:

- Solent and Dorset Coast SPA; and
- Bathing Waters:
  - Littlehampton; and
  - Middleton-on-sea.

4.3.7 There are no SACs, Shellfish Water Protected Areas or Nutrient Sensitive Waters within 2km of the offshore cable corridor[6]. The current status of all of the screened-in Bathing Waters is presented in **Table A-3** of **Annex A**. The Solent and Dorset Coast SPA is considered further in the **Report to Inform Appropriate Assessment** (Document Reference: 5.9) including its current conditions and conservation status are provided. Further details of the protected areas are provided in **Section 4.6**.

Biological habitats

4.3.8 There are four Higher Sensitivity habitats present (**Graphic A-1** of **Annex A**) within the Sussex coastal water body. These Higher Sensitivity habitats are “Chalk reef”, “Mussel beds”, “Subtidal kelp beds” and “Saltmarsh” (**Table A-5** of **Annex A**). Analysis of the area using the MAGIC mapping tool (Department for Environment, Food and Rural Affairs (Defra), 2023) has indicated that all of these habitat types are present within 500m of the offshore cable corridor, with the

[6] Based on the data available from Environment Agency (2021).

exception of “Saltmarsh” (**Graphic A-1** and **Table A-5** of **Annex A**). As such, further consideration of “Chalk reef”, “Mussel beds” and “Subtidal kelp beds” habitats are screened in (**Table A-5** of **Annex A**). **Graphic A-2 and Table A-6** of **Annex A** presents the Lower Sensitivity habitats in the Sussex coastal water body within the vicinity of the offshore cable corridor; principally “Cobbles, gravel and shingle”, “Intertidal soft sediment”, “Rocky shore”, “Subtidal soft sediments” and “Subtidal rocky reef”.

4.3.9 As part of the proposed marine activities, no offshore export cables installation or seabed preparation works are proposed to occur with the Arun transitional water body. As such, no direct interaction with any Lower Sensitivity habitats is expected to occur (**Graphic A-4** and **Table A-8** of **Annex A**). There are two Higher Sensitivity habitats present (**Graphic A-3** of **Annex A**) within the Arun transitional water body as a whole. These Higher Sensitivity habitats are "Saltmarsh" and "Subtidal kelp beds" (**Table A-7** of **Annex A**). Analysis of the area using the MAGIC mapping tool has indicated that habitat types are present within 500m of the offshore cable corridor (**Graphic A-3** and **Table A-7** of **Annex A**).

Scoping considerations

4.3.10 The Proposed Development does not have a discharge pipe or outfall, nor does the Proposed Development intend to release substances on the EQSD list. Therefore, the Proposed Development will not have a defined mixing zone for these chemicals. **Table 4-4** presents the detailed scoping considerations for the screened in marine activities. **Table 4-5** provides a summary of the results of the marine scoping for consideration in the detailed impact assessment.

4.3.11 The following protected areas, as within 2km of the offshore cable corridor, have been scoped in for further consideration in the detailed impact assessment:

- Solent and Dorset Coast SPA;
- Littlehampton Bathing Water; and
- Middleton-on-sea Bathing Water.

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Table 4-4 Scoping of activities associated with the offshore infrastructure

Activity	Phase and associated activities	Explanation	Scoped in?
Hydromorphology			
Could impact on the hydromorphology (for example morphology or tidal patterns) of a water body at High status?	All phases – the installation and operation of infrastructure	The proposed activities associated with the offshore infrastructure of the Proposed Development will not affect a water body of High status. Arun transitional water body is classed as 'Supports Good' for hydrological regime (not assessed for Sussex coastal water body) (**Table A-2 of Annex A**).	No – Impact assessment is not required
Could significantly impact the hydromorphology of any water body?	Construction – no activities have been identified which could impact the hydromorphology of the water bodies. Operation and maintenance – the presence of cables and cable protection. Decommissioning – no activities have been identified which could impact the hydromorphology of the water bodies.	There will be no physical barrier placed within the Sussex coastal or Arun transitional water bodies as a result of the activities from the Proposed Development. The presence of the offshore export cables buried in the seabed will not affect current speeds and will, as a worst-case, result in a minor depth reduction at cable crossings and where cable protection is used. Therefore, changes to water depth and currents are not considered to be significant. As presented in **Chapter 6: Coastal Processes, Volume 2** of the ES (Document Reference: 6.2.6), the installation of cable protection could result in a locally raised obstacle up to 1m above the present-day seabed level. Cable protection will be placed onto the seabed surface above the cable and could therefore directly trap or block	No – Impact assessment is not required

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Activity	Phase and associated activities	Explanation	Scoped in?
		sediment in transport, locally impacting down-drift locations. The assessment concluded that the presence of cable protection measures does not cause a long-term blockage to sediment transport where used within the offshore cable corridor. This is further supported by the assessment of the potential changes in the wave and tidal regime presented in **Chapter 6: Coastal processes, Volume 2** of the ES (Document Reference: 6.2.6). This assessment concluded that the changes in the wave regime, from the structures in the array, at the coastlines are predicted to be not measurable in practice and will be indistinguishable from normal short-term natural variability in wave height (both for individual wave heights and in terms of the overall sea state). Accordingly, these changes are not predicted to have any measurable influence on alongshore or cross-shore sediment transport.	
Is in a water body that is heavily modified for the same use as the activity?	All phases – the installation and operation of infrastructure.	The Sussex coastal water body is classed as heavily modified in terms of coastal protection (**Table A-2** of **Annex A**). It is not modified for the purpose of renewable energy and therefore no further consideration of the potential impacts associated with the Proposed Development is required, although it is recognised this presents a new pressure. The Arun transitional water body is classed as heavily modified in terms of flood protection (**Table A-2** of **Annex A**). It is not modified for the purpose of renewable energy	No – Impact assessment is not required

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Activity	Phase and associated activities	Explanation	Scoped in?
		and therefore no further consideration of the potential impacts associated with the Proposed Development is required, although it is recognised this presents a new pressure.	
Biology			
Is the footprint of the activity 0.5 km^2 or larger?	Construction – the installation of offshore export cables. Operation and Maintenance – the maintenance, reburial and repair of export cables. Decommissioning – It is expected that the export cables will be left *in situ* in line with current UK Government approved practice. Therefore, no activities have been identified.	The footprint of the construction works within the Sussex coastal water body, including a factor of 1.5 times the footprint in terms of dredging is approximately 0.09km^2 and is therefore below the 0.5km^2 threshold. No direct footprint of works associated with the offshore infrastructure is proposed within the Arun transitional water body. The lengths of cable to be replaced or reburied during the operation and maintenance phase will be shorter, and the potential impacts will be more localised and occur over a shorter duration than those considered during the construction phase.	No – Impact assessment is not required
Is the footprint of the activity 1% or more of the water body's area?	Construction – the installation of offshore export cables. Operation and maintenance – the maintenance, reburial and repair of export cables.	The footprint of the works, including a factor of 1.5 times the footprint of the dredged area, totals approximately 0.14% of the Sussex coastal water body area and therefore falls below the 1% threshold. No direct footprint of works associated with the offshore infrastructure is proposed within the Arun transitional water body.	No – Impact assessment is not required

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Activity	Phase and associated activities	Explanation	Scoped in?
	Decommissioning – It is expected that the export cables will be left *in situ* in line with current UK Government approved practice. Therefore, no activities have been identified.		
Is the footprint of the activity within 500m of any higher sensitivity habitat?	Construction – the installation of offshore export cables. Operation and maintenance – the maintenance, reburial and repair of export cables. Decommissioning – It is expected that the export cables will be left *in situ* in line with current UK Government approved practice. Therefore, no activities have been identified.	The Proposed Development is within 500m of Higher Sensitivity habitats in both the Sussex coastal and Arun transitional water bodies (**Tables A-5** and **A-7; Graphics A-1** and **A-3** of **Annex A**).	Yes
Is the footprint of the activity 1% or more of any lower sensitivity habitat?	Construction – the installation of offshore export cables. Operation and maintenance – the maintenance, reburial and repair of export cables. Decommissioning – It is expected that the export cables will be left *in*	The Proposed Development's footprint exceeds 1% of the Lower Sensitivity habitat areas for "Cobbles, gravel and shingle"; "Intertidal soft sediment" and "Rocky shore" within the Sussex coastal water body. The activities associated with the offshore infrastructure are not anticipated to have any direct interaction with the Lower Sensitivity habitats within the Arun transitional water body. However, consideration of these habitats has been	Yes

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Activity	Phase and associated activities	Explanation	Scoped in?
	situ in line with current UK Government approved practice. Therefore, no activities have been identified.	scoped in for completeness as the footprint of works, albeit outside the water body, exceed the 1% threshold.	
Fish			
Is in an estuary and could affect fish in the estuary, outside the estuary but could delay or prevent fish entering it or could affect fish migrating through the estuary?	All phases – no activities identified.	The activities associated with the offshore export cables for the Proposed Development will not take place within an estuary (River Arun catchment) and it is highly unlikely to, or prevent, fish entering or affect fish migrating through an estuary. For each of the migratory fish species known to be present within the Arun, **Chapter 8: Fish and shellfish ecology, Volume 2** of the ES (Document Reference: 6.2.8) concluded no significant impacts on these fish populations were predicted as a result of the Proposed Development.	No – Impact assessment is not required
Could impact on normal fish behaviour like movement, migration or spawning (for example creating a physical barrier, noise, chemical change	Construction – the installation of offshore export cables. No other activities have been identified. Operation and maintenance – the presence of offshore export cables. Decommissioning – no activities have been identified.	The proposed activities for the Proposed Development will not cause a physical barrier to prevent fish from entering the estuaries or their migration patterns. The presence of the offshore export cable buried in the seabed will not affect current speeds and will, as a worst-case result in a minor reduction in terms of total water depth at cable crossings. Therefore, changes to water depth and changes in currents (both tidal and non-tidal) are not considered to be significant and are not considered to	No – Impact assessment is not required

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Activity	Phase and associated activities	Explanation	Scoped in?
or a change in depth or flow)?		impact on normal fish behaviour, such as, movement, migration or spawning. **Chapter 8: Fish and shellfish ecology, Volume 2** of the ES (Document Reference: 6.2.8) presents full details of the noise modelling undertaken to determine the potential impacts of noise and vibration on fish receptors as a result of the proposed activities associated with the offshore elements of the Proposed Development. No significant effects were predicted on fish species and, given the distance from the array to the water bodies, no measurable effects on fish species are anticipated. There will not be any outfalls or discharges associated with the Proposed Development and so the proposed activities are not expected to cause a reduction in the dissolved oxygen in the water column. Therefore, the potential for chemical changes and its implication on fish species will not be taken forward as a consideration of the impact assessment.	
Could cause entrainment or impingement of fish?	All phases – no activities identified.	No entrainment or impingement will occur as a result of the Proposed Development.	No – Impact assessment is not required
Water quality			
Could affect water clarity,	Construction – the installation of offshore export cables and	It is not anticipated that the temperature or salinity will be affected as a result of export cable installation activities	Yes

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Activity	Phase and associated activities	Explanation	Scoped in?
temperature, salinity, oxygen levels, nutrients or microbial patterns continuously for longer than a spring neap tidal cycle (about 14 days)?	undertaking the trenchless crossing (such as HDD) at the landfall. Operation and maintenance – the maintenance, reburial and repair of export cables. Decommissioning – It is expected that the export cables will be left *in situ* in line with current UK Government approved practice. Therefore, no activities have been identified.	and therefore these parameters have not been taken forward to the impact assessment. The resuspension of sediments into the water column will result in short-term increases in suspended sediment concentrations (SSC) as a result of construction activities such as seabed preparation and cable installation. The methods used for installation will affect the amount of sediment displaced, but it is considered that the impacts will be localised, and high levels of SSC will not disperse to a significant level outside the footprint of the activity. During these periods of increased SSC, there will be a reduction in water clarity (an increase in turbidity) which could result in the greater longevity of microbes in the water column. No additional nutrients will be introduced into the marine environment as a result of the proposed offshore activities. Whilst sediment-bound nutrients may be released as a result of the proposed offshore activities the concentrations are not anticipated to be significant. These releases are considered to be analogous storm events and as such no deterioration from the existing baseline with respect to nutrients is anticipated.	
Is in a water body with a phytoplankton status of	All phases – the installation and operation of infrastructure.	The Sussex coastal water body is currently classified as being of Good phytoplankton status (**Table A-2** of **Annex A**), and therefore this has not been taken forward for the impact assessment.	No – Impact assessment is not required

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Activity	Phase and associated activities	Explanation	Scoped in?
Moderate, Poor or Bad?		The Arun transitional water body is not currently classified for phytoplankton status, (**Table A-2** of **Annex A**), and therefore this has not been taken forward for the impact assessment.	
Is in a water body with a history of harmful algae?	All phases – the installation and operation of infrastructure.	This has not been monitored for the Sussex coastal or Arun transitional water bodies and has therefore not been taken forward for impact assessment.	No – Impact assessment is not required
Does the activity use or release chemicals which are on the Environmental Quality Standards Directive (EQSD) list?	Construction – trenchless techniques at the landfall. Operation and maintenance – no activities identified. Decommissioning – no activities identified.	The proposed activities do not include the use of direct discharge of any chemicals listed under the EQSD list. The only substance which may be released into the environment from the Proposed Development will be bentonite from the trenchless crossing (such as HDD) at the landfall export cable installation. Bentonite is a non-toxic, inert, natural clay mineral (<63µm particle diameter) and is not on the EQSD list. It is included in the List of Notified Chemicals approved for use and discharge into the marine environment and is classified as a group E substance under the Offshore Chemical Notification Scheme (OCNS) (Centre for Environment, Fisheries and Aquaculture Science (Cefas), 2020). Substances in group E are defined as the group least likely to cause environmental harm and are "*readily biodegradable and is non-bioaccumulative*". This is further supported by bentonite being included on the Oslo-Paris Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) List of Substances Used and Discharged	No – Impact assessment is not required

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Activity	Phase and associated activities	Explanation	Scoped in?
		Offshore which Are Considered to Pose Little or No Risk to the Environment (PLONOR) (OSPAR, 2019). Therefore, no deterioration of the status of any sites designated under the WFD is anticipated from the release of bentonite.	
Does the activity disturb sediments with contaminants above Cefas Action Level 1?	Construction – the installation of offshore export cables. Operation and maintenance – the maintenance, reburial and repair of export cables. Decommissioning – It is expected that the export cables will be left *in situ* in line with current UK Government approved practice. Therefore, no activities have been identified.	Recorded sediment contaminant concentrations indicate minor exceedances in samples above Cefas Action Level 1. Therefore, the proposed works could disturb sediments containing contaminants above Action Level 1.	Yes
Invasive non-native species (INNS)			
Could the activities introduce or spread INNS?	Construction – the use of construction vessels. Operation and maintenance – the presence of infrastructure on the seabed and operation and maintenance vessels.	It is likely that any man-made structures placed on the seabed will be colonised by a range of marine species. These structures have the potential to act as artificial reefs and may also facilitate the spread of non-native species if these species are already present (they will not act as a vector for INNS in and of themselves). The vast majority of these structures will be located within the array area and so are not relevant to this assessment; however, cable protection may be installed within the Sussex coastal water	Yes

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Activity	Phase and associated activities	Explanation	Scoped in?
	Decommissioning – the use of decommissioning vessels.	body. If required, it is likely to be limited to small areas of the offshore cable corridor. No cable protection will be installed within the Arun water body for the offshore export cables. Construction, operation and maintenance, and decommissioning vessels have the potential to introduce or spread INNS through the discharge of ballast water within the water bodies. This potential impact will be mitigated through designed-in environmental measures such as the marine biosecurity plan as part of the **Outline Project Environmental Management Plan (PEMP)** (Document Reference: 7.11) (as per commitment C-95), as well as vessels complying with International Maritime Organisation (IMO) ballast water management guidelines, ensuring that risks associated with INNS are minimised. In addition, the materials and vessels are highly likely to be from within European and/or UK waters. There is currently little evidence from other offshore wind farms to suggest adverse effects on key species and habitats from INNS.	

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Table 4-5 Summary of scoping of activities associated with the offshore infrastructure

Water Body	Receptor	Potential risk to receptor	Risk issue(s) for impact assessment
Sussex coastal water body (GB640704540003)	Hydromorphology	No	Not applicable
	Biology – habitats	Yes	Offshore cable installation repair and maintenance may result in direct and indirect effects upon the features identified.
	Biology – fish	No	Not applicable
	Water quality	Yes	Offshore cable installation, repair and maintenance may affect water clarity and microbiology.
	INNS	Yes	The marine activities associated with the offshore elements of the Proposed Development may introduce or increase spread of INNS.
Arun transitional water body (GB540704105000)	Hydromorphology	No	Not applicable
	Biology – habitats	Yes	Offshore cable installation repair and maintenance may result in direct and indirect effects upon the features identified.
	Biology – fish	No	Not applicable
	Water quality	Yes	Offshore cable installation repair and maintenance may affect water clarity and microbiology.
	INNS	Yes	The marine activities associated with the offshore elements of the Proposed Development may introduce or increase spread of INNS.

4.4 Lake water bodies

4.4.1 There are no lake WFD water bodies identified for consideration in **Chapter 26: Water environment, Volume 2** of the ES (Document Reference: 6.2.26). Therefore, lake WFD water bodies have been screened out of the assessment carried out within this Appendix.

4.5 Groundwater water bodies

4.5.1 The assumptions made in developing the scoping methodology / process for groundwater bodies, in terms of which activities are scoped in, include:

- only significant activities / infrastructure that potentially have a direct connection to the groundwater bodies are included. This includes all trenchless onshore cable crossings, and trenched and culverted haul road watercourse crossings;
- any activities / infrastructure that require shallow foundations and shallow/limited potential for dewatering are screened out. This includes, but is not limited to, temporary construction working areas, bridges, onshore cable trenching, and temporary construction compounds. It is assumed any dewatered arisings will be disposed of locally via soakaways or to an adjacent watercourse, therefore having a neutral effect on water body water balance, as set out in the UK Technical Advisory Group (UKTAG) guidance (UKTAG, 2012); and
- the mitigation measures associated with construction activities that are screened out in the assessment of groundwater bodies are, however, discussed within the assessment of the surface water bodies. These measures are assumed to protect the groundwater bodies from any potential water quality impacts.

4.5.2 Six groundwater WFD water bodies intersected by the onshore part of the proposed DCO Order Limits are screened in for detailed assessment. This includes Littlehampton Anticline West, Littlehampton Anticline East, Sussex Lambeth Group, Worthing Chalk, Lower Greensand Adur and Ouse, and Adur and Ouse Hastings Beds. These groundwater bodies are shown in relation to the Proposed Development on **Figure 26.5, Volume 3** of the ES (Document Reference: 6.3.26) along with **Chapter 26: Water environment, Volume 2** of the ES (Document Reference: 6.2.26). **Annex B** provides details on which activities have been screened in for each of the groundwater bodies under consideration. More detail on the scoping of individual WFD elements is given in **Annex B**. A summary of activities scoped in for detailed assessment in groundwater WFD water bodies is provided in **Table 4-6**. The activities and elements that are screened and scoped in are considered for further assessment in **Annex C** and **Section 5**.

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Table 4-6 Screening of activities/infrastructure for Groundwater water bodies

Activity / Infrastructure	Phase and scoping result	Explanation
Trenchless crossing (HDD) at the Landfall works	Construction and decommissioning: **In**	Potential for pollution pathways to enter groundwater from the construction of a trenchless crossing, and associated ground disturbance and dewatering.
	Operation and maintenance: **Out**	Minimal maintenance activities during the operation and maintenance phase are unlikely to have an interaction between infrastructure and groundwater.
Onshore cable circuits	Construction and decommissioning: **Out**	Effects on the groundwater bodies are not likely to be significant due to the shallow nature of the proposed trenches and limited potential for dewatering.
	Operation and maintenance: **Out**	Minimal maintenance activities during the operation and maintenance phase are unlikely to have an interaction between infrastructure and groundwater.
Onshore cable corridor watercourse crossings - Trenchless methods (such as HDD)	Construction and decommissioning: **In**	Potential for pollution pathways to enter groundwater from the construction of a trenchless crossing, and associated ground disturbance and dewatering.
	Operation and maintenance: **Out**	No effects anticipated on water bodies as all associated working areas will be reinstated to their original condition, and the pre-installed ducts will be sufficiently buried beneath watercourses to avoid scour.

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Activity / Infrastructure	Phase and scoping result	Explanation
Onshore cable corridor watercourse crossings – Open cut trenching methods	Construction and decommissioning: **In**	Potential for a pollution pathway to be created through the construction of a trench across watercourses and through interactions between groundwater and surface waters in stretches losing flow to the ground.
	Operation and maintenance: **Out**	There will be no groundwater effect between the infrastructure and groundwater bodies during the operation and maintenance phase due to the lack of intrusive works.
Temporary construction haul road	Construction and decommissioning: **Out**	Effects on the groundwater bodies are not likely to be significant due to the superficial nature of the proposed temporary construction haul road with very limited requirement for dewatering.
	Operation and maintenance: **Out**	No effects identified during operation and maintenance associated with the onshore elements of the Proposed Development as temporary construction haul roads will be removed after construction complete.
Temporary construction haul road watercourse crossings (culverts)	Construction and decommissioning: **In**	Note that, due to the superficial nature of bridges, there are unlikely to be any effects on groundwater bodies. There is potential for a pollution pathway to be created through the construction of culverts and through interactions between groundwater and surface waters during construction in river stretches losing flow to the ground.
	Operation and maintenance: **Out**	No effects identified during operation and maintenance associated with the onshore elements of the Proposed Development as

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Activity / Infrastructure	Phase and scoping result	Explanation
		temporary construction haul road crossings will be removed after construction complete.
Temporary construction compounds	Construction and decommissioning: **Out**	Effects on the groundwater bodies are not likely to be significant due to the superficial nature of the proposed temporary construction compounds with very limited requirement for dewatering.
	Operation and maintenance: **Out**	No effects identified as temporary construction compounds will be removed after construction.
Onshore substation	Construction and decommissioning: **Out**	Effects on the groundwater bodies are not likely to be significant due to the shallow nature of the proposed onshore substation works and limited potential for dewatering.

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4.6 Protected areas

4.6.1 Consideration must also be paid to protected areas that are designated under European WFD legislation (as set out in **Section 1.4** earlier). These include drinking water, Bathing Water and Natura 2000 protected areas.

4.6.2 There are six drinking water protected areas (DWPAs) and six Safeguard Zones that will potentially be affected by the Proposed Development. These include:

- Littlehampton Anticline East (UKGB40701G503400) DWPA;
- Littlehampton Anticline West (UKGB40701G504900) DWPA;
- Sussex Lambeth Group (UKGB40701G505100) DWPA;
- Worthing chalk (UKGB40701G505300) DWPA;
- Patching GWSGZ0225 Safeguard Zone;
- Sompting GWSGZ0229 Safeguard Zone;
- Burpham GWSGZ0141 Safeguard Zone;
- Findon GWSGZ0142 Safeguard Zone;
- Stanhope Lodge GWSGZ0230 Safeguard Zone;
- Northbrook, Worthing GWSGZ0223 Safeguard Zone;
- Lower Greensand Adur & Ouse (UKGB40701G502400) DWPA; and
- Adur & Ouse Hastings Beds (UKGB40702G502000) DWPA.

4.6.3 The designated Bathing Waters that have a connection to the Proposed Development are:

- Littlehampton (UK15500); and
- Middleton-on-sea (UK15600).

4.6.4 The European Union (EU) Nitrates Directive (European Commission, 1991a) and Urban Waste Water Treatment Directive (European Commission, 1991b) areas that have a connection to the Proposed Development are:

- Sussex Chalk protected under EU Nitrates Directive (G56);
- Aldingbourne Rife Nitrate Vulnerable Zone (NVZ) S517;
- Adur East (Sakeham) NVZ (S522); and
- Adur East protected under Urban Waste Water Treatment Directive (UKENRI146).

4.6.5 The National Site Network areas that have a connection to the Proposed Development are:

- Solent and Dorset Coast SPA; and
- Arun Valley SPA and SAC.

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4.6.6 Each of the protected sites are considered in **Section 5** of this Appendix within the assessment process as a component of the WFD water body that they fall within.

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5. Further assessment results

5.1 Structure of further assessment

5.1.1 As the design of the onshore elements of the Proposed Development, in many cases, is not proposed to vary significantly from water body to water body, the approach adopted in **Annex C** provides one assessment for each activity / infrastructure type per water body category (river, coastal, transitional, groundwater). Based on the screening and scoping assessment presented in **Section 4**, those water bodies that have been identified as not requiring detailed assessment are not considered here.

5.1.2 **Annex C** also provides a detailed impact assessment of the elements scoped in, as summarised in **Table 4-5**, which may be impacted by the proposed activities associated with the offshore infrastructure.

5.1.3 This Section provides a summary of findings, including consideration of both the WFD requirement for no deterioration in class and the need to ensure the Proposed Development does not prevent the achievement of future target status.

5.1.4 The screening and scoping of activities / infrastructure types that was undertaken in **Section 4** does not include a consideration of any embedded environmental measures that will be implemented as part of the Proposed Development. However, in practice these embedded environmental measures will be incorporated in order to manage any potential effects on the water environment to an acceptable level. A description of the relevant onshore environmental measures is presented in **Chapter 26: Water environment, Volume 2** of the ES (Document Reference: 6.2.26), and a description of the relevant offshore environmental measures is provided in **Chapter 9: Benthic, subtidal and intertidal ecology, Volume 2** of the ES (Document Reference: 6.2.9)**.** In **Annex C**, the relevant embedded environmental measures have been crossed referenced and grouped by subject against each potential effect in further detail. A complete set of embedded environmental measures for all onshore and offshore aspects is provided in **Commitments Register** of the ES (Document Reference: 7.22). **Table 5-1** provides a brief summary of the onshore environmental measures which will manage potential effects associated with WFD elements.

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Table 5-1 Summary of embedded environmental measures and their relevance regarding potential affects

WFD element	Potential effect on WFD element	Embedded environmental measure to manage potential effect – for full description see Annex C
Hydromorphology	Alteration of flow regime – via input to watercourses and via indirect changes within the catchment	C-77, C-141 and C-142: Management of dewatered groundwater, and environmental permit for discharge activity. C-130, C-131, C-133 and C-135: Appropriate standoff distances and methodologies for temporary topsoil stockpiling. C-121 and C-140: Effective drainage so as to not increase baseline runoff rates. C-120 and C-129: Temporary construction works areas constructed from semi-permeable aggregate where possible. C-27, C-73, C-120 and C-129: Good construction practices for temporary construction compounds including drainage strategy. C-28: Land drainage management. C-17, C-64, C-126, C-127, C-128, C-139, C-145, C-177, C-178 and C-252: Appropriate temporary construction haul road watercourse crossing design and implementation. C-119, C-120 and C-175: Appropriate temporary construction haul road design and installation. C-5, C-17, C-18, C-19, C-122, C-138, C-139, C-234, C-235 and C-236, C-241: Appropriate (trenchless and trenched) onshore cable watercourse crossing design. C-123: Appropriate standoff distances from watercourses for trenchless pits. C-19, C-29, C-141 and C-154 Good construction practices for trenching. C-227, C-250 and C-253: Pollution prevention and remediation

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WFD element	Potential effect on WFD element	Embedded environmental measure to manage potential effect – for full description see Annex C
Hydromorphology	Alteration of channel morphology	C-17, C-64, C-126, C-127, C-128, C-139, C-145, C-177, C-178 and C-252. Appropriate temporary construction haul road watercourse crossing design and implementation. C-5, C-17, C-18, C-19, C-122, C-138 and C-139: Appropriate (trenchless and trenched) onshore cable watercourse crossing design. C-17 and C-182: Appropriate environmental permits and land drainage consents. C-28: Land drainage management.
Chemical and Physico – chemical	Mobilisation of sediment or contaminated sediment / material in the catchment that has the potential to enter the watercourse network. Introduction and / or mobilisation of sediment or contaminated sediment / material within the channel that has the potential to be transported downstream	C-77, C-141 and C-142: Management of dewatered groundwater, and environmental permit for discharge activity. C-130, C-131, C-133 and C-135: Appropriate standoff distances and methodologies for temporary topsoil stockpiling. C-121 and C-140: Effective drainage so as to not increase baseline runoff rates. C-120 and C-129: Temporary construction works areas constructed from semi-permeable aggregate where possible. C-27, C-73, C-120 and C-129: Good construction practices for temporary construction compounds including drainage strategy. C-28: Land drainage management. C-17, C-64, C-126, C-127, C-128, C-139, C-145, C-177, C-178 and C-252. Appropriate temporary construction haul road watercourse crossing design and implementation. C-119, C-120 and C-175: Appropriate temporary construction haul road design and installation. C-5, C-17, C-18, C-19, C-122, C-138 C-139, C-234, C-236, C-241, C-246 and C-251: Appropriate (Trenchless and Trenched) cable watercourse crossing design.

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WFD element	Potential effect on WFD element	Embedded environmental measure to manage potential effect – for full description see Annex C
		C-123: Appropriate standoff distances from watercourses for trenchless pits. C-19, C-29, C-141 and C-154: Good construction practices for trenching. C-8, C-76, C-129, C-149, C-151, C-167, C-250 and C-253: Pollution prevention and remediation. C-69 and C-143: Outline Materials Management Plan and Unexpected Contamination Protocol.
Biological Quality	Mobilisation of sediment or contaminated sediment / material in the catchment that has the potential to enter the watercourse network and have a potential knock on impact on the habitats of fish, macrophytes, phytobenthos and invertebrates. Introduction and/or mobilisation of sediment or contaminated sediment / material within the channel that has the potential to be transported downstream and have potential knock on impact on the habitats of fish, macrophytes, phytobenthos and invertebrates.	C-28: Land drainage management. C-17, C-64, C-126, C-127, C-128, C-139, C-145, C-177 and C-178. Appropriate temporary construction haul road watercourse crossing design and implementation. C-5, C-17, C-18, C-19, C-122, C-138, C-139 and C-229: Appropriate (trenchless and trenched) onshore cable watercourse crossing design. C-123: Appropriate standoff distances from watercourses for trenchless pits. C-19, C-29, C-141 and C-154: Good construction practices for trenching. C-8, C-76, C-129, C-149, C-151 and C-167: Pollution prevention and remediation. C-69 and C-143: Outline Materials Management Plan and Unexpected Contamination Protocol. C-64, C-205 and C-210: Aquatic ecological protection.

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WFD element	Potential effect on WFD element	Embedded environmental measure to manage potential effect – for full description see Annex C
Groundwater Quantity	Alteration to groundwater quantity	C-77, C-141 and C-142: Management of dewatered groundwater, and Environmental Permit for Discharge Activity. C-17, C-64, C-126, C-127, C-128, C-139, C-145, C-177 and C-178: Appropriate temporary construction haul road watercourse crossing design and implementation. C-5, C-17, C-18, C-19, C-122, C-138 and C-139: Appropriate (trenchless and trenched) onshore cable watercourse crossing design and installation. C-19, C-29, C-141 and C-154. Good construction practices for trenching.
Groundwater Chemical	Alteration to groundwater quality	C-69 and C-143: Outline Materials Management Plan and Unexpected Contamination Protocol. C-8, C-76, C-129, C-149, C-151, C-167, C-227, C-250 and C-253: Pollution prevention and remediation. C-5, C-17, C-18, C-19, C-122, C-138, C-139, C-234, C-236, C-241, C-246 and C-251 Appropriate (Trenchless and Trenched) cable watercourse crossing design and installation.
Biological habitats	The installation of subsea export cables.	C-43 The subsea export cable ducts will be drilled underneath the beach using trenchless (such as HDD) techniques. C-45: Where possible, cable burial will be the preferred option for cable protection. Cable burial will be informed by the cable burial risk assessment and detailed within the Cable Specification Plan.
Biological habitats	INNS	C-95: Mitigations and control of invasive species through a Project Environmental Management Plan.

5.1.5 In each sub-section (**Section 5.2** and **5.3**) conclusions are provided on whether these environmental measures will help address potential effects on water bodies, in order to achieve compliance with respective WFD objectives.

5.2 Surface water bodies

Introduction

5.2.1 This Section provides a summary of the assessments that were carried out in **Annex C** for all surface water bodies and activities that were screened and scoped in.

Sussex GB640704540003

5.2.2 Based on the results of the screening and scoping assessment (**Annex B**, **Table 4-3** and **Table 4-4**), activities may pose a risk to the WFD status and objectives of this water body for the elements listed in **Table 5-2** and **Table 5-3**. A further assessment for the Sussex coastal water body, taking account of embedded environmental measures is presented within **Annex C**.

Table 5-2 Summary of the further assessment results, from onshore activities, for the Sussex coastal water body

WFD element scoped in	Summary of further assessment (presented in Annex C)
Physico – Chemical Quality Elements – Ammonia **Phosphate** **Dissolved oxygen** **Temperature** **Chemical Quality Elements – Specific Pollutants, Priority substances and Priority Hazardous substances** **Biological Quality Elements – Fish, phytoplankton, macrophytes, phytobenthos, and invertebrates**	**Annex C** provides a comprehensive summary of the effects of activities / infrastructure on each WFD classification element. The embedded environmental measures summarised in **Table 5-1** will be sufficient to ensure that any effects will not lead to deterioration in WFD status for any stage of the Proposed Development.

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Table 5-3 Summary of the further assessment results, from offshore activities, for the Sussex coastal water body

WFD Element scoped in	Summary of further assessment (presented in Annex C)
Biology – Habitats	**Annex C** provides a comprehensive summary of the effects of activities / infrastructure on each WFD classification element. The embedded environmental measures summarised in **Table 5-1** will be sufficient to ensure that any effects will not lead to deterioration in WFD status for any stage of the Proposed Development.
Biology – INNS	
Water Quality – Clarity	
Water Quality – Chemical Status	
Water Quality – Microbiology	

5.2.3 The Sussex coastal water body (GB640704540003) is currently designated as having Moderate overall status, with Moderate ecological potential and it is currently failing for chemical status. The ecological potential was assessed as being less than Good due to physical modifications from coastal protection use. The mitigation measures assessment had an outcome of Moderate or less in 2019[7]. The reasons for failing were listed as being due to disproportionate burdens[8].

5.2.4 Implementation of the embedded environmental measures will largely remove the sources of any adverse effects (during all phases of the Proposed Development) that may have potential to cause deterioration in WFD status (**Table 5-2** and **Table 5-3)**. All residual effects are considered to be short duration in relation to the RBMP planning timescales (six years) and/or negligible in relation to the Sussex coastal water body as a whole. Therefore, in the case of the Sussex coastal water body (GB640704540003), the Proposed Development is considered to be compliant with the objectives of the WFD.

5.2.5 On the same basis it can also be concluded that the Proposed Development will not have any adverse effects on the conservation objectives of the Solent and South SPA (as reported in **Chapter 6: Coastal processes, Volume 2** of the ES (Document Reference: 6.2.6), **Chapter 8: Fish and shellfish ecology, Volume 2** of the ES (Document Reference: 6.2.8), and **Chapter 9: Benthic, subtidal and**

[7] Mitigation Measures Assessment are used for Heavily Modified Water Bodies (HMWBs) where anthropogenic alteration (for example, for flood defences, urbanisation or land drainage) means that natural status is not an appropriate target. The mitigation measures assessment links mitigation measures to ecological improvement targets. In relation to the Sussex coastal water body the mitigation measure is to retain habitats in relation to the coastal protection use.

[8] Disproportionate burdens applies where the measure would be:

a) unaffordable to implement within a particular timetable without creating disproportionate burdens for particular sectors or parts of society); or

b) the only solution would be significantly at odds with the polluter pays principle.

intertidal ecology, Volume 2 of the ES (Document Reference: 6.2.9)) which lies within part of the Sussex coastal water body. In addition, it can be concluded that the performance of Middleton-on-Sea and Littlehampton Bathing Waters will not be adversely affected by the Proposed Development.

Arun GB540704105000

5.2.6 Based on the results of the screening and scoping assessment (**Annex B, Table 4-3** and **Table 4-4**), activities may pose a risk to the WFD status and objectives of this water body for the elements listed in **Table 5-4** and **Table 5-5**. A summary of the further assessment for the Arun transitional water body, taking account of embedded environmental measures is presented within **Annex C**.

Table 5-4 Summary of the further assessment results, from onshore activities, for the Arun transitional water body

WFD element scoped in	Summary of further assessment (presented in Annex C)
Hydromorphological Supporting Elements – all sub elements, specifically structure and substrate of the river bed	**Annex C** provides a comprehensive summary of the effects of activities / infrastructure on each WFD classification element. The embedded environmental measures summarised in **Table 5-1** will be sufficient to ensure that any effects will not lead to deterioration in WFD status for any stage of the Proposed Development.
Physico – Chemical Quality Elements – Ammonia Phosphate Dissolved oxygen Temperature	
Chemical Quality Elements – Specific Pollutants, Priority substances and Priority Hazardous substances	
Biological Quality Elements – Fish, macrophytes, phytobenthos, and invertebrates	

Table 5-5 Summary of the further assessment results, from offshore activities, for the Arun transitional water body

WFD element scoped in	Summary of further assessment (presented in Annex C)
Biology – Habitats	**Annex C** provides a comprehensive summary of the effects of activities/infrastructure on each
Biology – INNS	

WFD element scoped in	Summary of further assessment (presented in Annex C)
Water Quality – Clarity	WFD classification element. The embedded environmental measures summarised in **Table 5-1** will be sufficient to ensure that any effects will not lead to deterioration in WFD status for any stage of the Proposed Development.
Water Quality – Chemical Status	
Water Quality – Microbiology	

5.2.7 The Arun transitional water body (GB540704105000) is currently designated as having Moderate ecological status with the 2019 Mitigation Measures Assessment[9] identified as the element preventing the attainment of Good status. The reasons for failing were listed as being due to disproportionate burdens[10]. The Arun is also currently designated as failing chemical status with mercury and its compounds, and Polybrominated diphenyl ethers (PBDE) identified as the failing classification elements. The waterbody has an objective to achieve Good status by 2027.

5.2.8 Implementation of the embedded environmental measures will largely remove the sources of any adverse effects (during all phases of the Proposed Development) that may have potential to cause deterioration in WFD status (**Table 5-4** and **Table 5-5**). All residual effects are considered to be short duration in relation to the RBMP planning timescales (six years) and/or negligible in relation to the Arun transitional water body as a whole. Therefore, in the case of the Arun transitional water body (GB540704105000), the Proposed Development is considered to be compliant with the objectives of the WFD. On the same basis, it can also be concluded that the Proposed Development will not have any adverse effects on the conservation objectives of the Arun Valley SPA and SAC (as reported in **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the ES (Document Reference: 6.2.22)), and the Arun DWPA and Safeguard Zone which all lie within parts of the Arun transitional water body.

Ryebank Rife GB107041006620

5.2.9 Based on the results of the screening and scoping assessment (**Annex B**), activities may pose a risk to the WFD status and objectives in this water body for the elements listed in **Table 5-6**. A summary of the further assessment for the

[9] Mitigation Measures Assessment are used for HMWBs where anthropogenic alteration (for example for flood defences, urbanisation or land drainage) means that natural status is not an appropriate target. The mitigation measures assessment links mitigation measures to ecological improvement targets. In relation to the Arun transitional water body the mitigation measure is in relation to physical modifications for the flood protection use.

[10] Disproportionate burdens applies where the measure would be:

a) unaffordable to implement within a particular timetable without creating disproportionate burdens for particular sectors or parts of society); or

b) the only solution would be significantly at odds with the polluter pays principle.

Ryebank Rife water body, taking account of embedded environmental measures is presented within **Annex C**.

Table 5-6 Summary of the further assessment results, from onshore activities, for the Ryebank Rife river water body

WFD element scoped in	Summary of further assessment (presented in Annex C)
Hydromorphological Supporting Elements – all sub-elements, specifically structure and substrate of the river bed **Physico – Chemical Quality Elements – Ammonia** **Phosphate** **Dissolved oxygen** **Temperature** **Chemical Quality Elements – Specific Pollutants, Priority substances and Priority Hazardous substances** **Biological Quality Elements – Fish, macrophytes, phytobenthos, and invertebrates**	**Annex C** provides a comprehensive summary of the effects of activities / infrastructure on each WFD classification element. The embedded environmental measures summarised in **Table 5-1** will be sufficient to ensure that any effects will not lead to deterioration in WFD status for any stage of the Proposed Development.

5.2.10 The Ryebank Rife river water body (GB107041006620) is currently designated as having Moderate ecological potential with dissolved oxygen identified as the element preventing the attainment of Good status. Ryebank Rife is also currently designated as failing chemical status with mercury and its compounds and PBDE identified as the failing classification element. The waterbody has an objective to achieve Good status by 2027.

5.2.11 Implementation of the embedded environmental measures will largely remove the sources of any adverse effects (during all phases of the Proposed Development) that may have potential to cause deterioration in WFD status (**Table 5-6**). All residual effects are considered to be short duration in relation to the RBMP planning timescales (six years) and/or negligible in relation to the Ryebank Rife water body as a whole. Therefore, in the case of the Ryebank Rife river water body (GB107041006620), the Proposed Development is considered to be compliant with the objectives of the WFD. On the same basis, it can also be concluded that the Proposed Development will not have any adverse effects on the objectives of the Aldingbourne Rife NVZ which lies within part of the Ryebank Rife river water body.

Black Ditch (West Sussex) GB107041012890

5.2.12 Based on the results of the screening and scoping assessment (**Annex B**), activities may pose a risk to the WFD status and objectives in this water body for the elements listed in **Table 5-7**. A summary of the further assessment for the Black Ditch (West Sussex) river water body, taking account of embedded environmental measures is presented within **Annex C**.

Table 5-7 Summary of the further assessment results, from onshore activities, for the Black Ditch (West Sussex) river water body

WFD element scoped in	Summary of further assessment (presented in Annex C)
Hydromorphological Supporting Elements – all sub-elements, specifically structure and substrate of the river bed **Physico – Chemical Quality Elements – Ammonia** **Phosphate** **Dissolved oxygen** **Temperature** **Chemical Quality Elements – Specific Pollutants, Priority substances and Priority Hazardous substances** **Biological Quality Elements – Fish, macrophytes, phytobenthos, and invertebrates**	**Annex C** provides a comprehensive summary of the effects of activities / infrastructure on each WFD classification element. The embedded environmental measures summarised in **Table 5-1** will be sufficient to ensure that any effects will not lead to deterioration in WFD status for any stage of the Proposed Development.

5.2.13 The Black Ditch (West Sussex) river water body (GB107041012890) is currently designated as having poor ecological status with fish, macrophytes and phytobenthos identified as the elements preventing the attainment of Good status. The Black Ditch is also currently designated as failing chemical status with mercury and its compounds, and PBDE identified as the failing classification element. The waterbody has an objective to achieve Good status by 2027.

5.2.14 Implementation of the embedded environmental measures will largely remove the sources of any adverse effects (during all phases of the Proposed Development) that may have potential to cause deterioration in WFD status (**Table 5-7**). All residual effects are considered to be short duration in relation to the RBMP planning timescales (six years) and/or negligible in relation to the Black Ditch water body as a whole. Therefore, in the case of the Black Ditch WFD water body (GB107041012890), the Proposed Development is considered to be compliant with the objectives of the WFD.

Honeybridge Stream GB107041012120

5.2.15 Based on the results of the screening and scoping assessment (**Annex B**), activities may pose a risk to the WFD status and objectives in this water body for the elements listed in **Table 5-8**. A summary of the further assessment for the Honeybridge Stream river water body, taking account of embedded environmental measures is presented within **Annex C**.

Table 5-8 Summary of the further assessment results, from onshore activities, for the Honeybridge Stream river water body

WFD element scoped in	Summary of further assessment (presented in Annex C)
Hydromorphological Supporting Elements – all sub-elements, specifically structure and substrate of the river bed **Physico – Chemical Quality Elements – Ammonia** **Phosphate** **Dissolved oxygen** **Temperature** **Chemical Quality Elements – Specific Pollutants, Priority substances and Priority Hazardous substances** **Biological Quality Elements – Fish, macrophytes, phytobenthos, and invertebrates**	**Annex C** provides a comprehensive summary of the effects of activities / infrastructure on each WFD classification element. The embedded environmental measures summarised in **Table 5-1** will be sufficient to ensure that any effects will not lead to deterioration in WFD status for any stage of the Proposed Development.

5.2.16 The Honeybridge Stream river water body (GB107041012120) is currently designated as having Poor ecological status with fish, macrophytes and phytobenthos identified as the elements preventing the attainment of Good status The Honeybridge Stream is also currently designated as failing chemical status with mercury and its compounds, and PBDE identified as the failing classification elements. The waterbody has an objective to achieve Good status by 2027.

5.2.17 Implementation of the embedded environmental measures will largely remove the sources of any adverse effects (during all phases of the Proposed Development) that may have potential to cause deterioration in WFD status (**Table 5-8**). All residual effects are considered to be short duration in relation to the RBMP planning timescales (six years) and/or negligible in relation to the Honeybridge Stream water body as a whole. Therefore, in the case of the Honeybridge Stream WFD water body (GB107041012120), the Proposed Development is considered to be compliant with the objectives of the WFD.

Adur Transitional GB540704116000

5.2.18 Based on the results of the screening and scoping assessment (**Annex B**), activities may pose a risk to the WFD status and objectives in this water body for the elements listed in **Table 5-9**. A summary of the further assessment for the Adur transitional water body, taking account of embedded environmental measures is presented within **Annex C**.

Table 5-9 Summary of the further assessment results, from onshore activities, for the Adur transitional water body

WFD Element scoped in	Summary of further assessment (presented in Annex C)
Hydromorphological Supporting Elements – all sub-elements, specifically structure and substrate of the river bed **Physico – Chemical Quality Elements – Ammonia** **Phosphate** **Dissolved oxygen** **Temperature** **Chemical Quality Elements – Specific Pollutants, Priority substances and Priority Hazardous substances** **Biological Quality Elements – Fish, macrophytes, phytobenthos, and invertebrates**	**Annex C** provides a comprehensive summary of the effects of activities / infrastructure on each WFD classification element. The embedded environmental measures summarised in **Table 5-1** will be sufficient to ensure that any effects will not lead to deterioration in WFD status for any stage of the Proposed Development.

5.2.19 The heavily modified Adur transitional water body (GB540704116000) is currently designated as having Moderate overall status. The ecological potential and chemical status were both assessed as being less than Good with angiosperms, fish, dissolved inorganic nitrogen, mitigation measures assessment and mercury and its compounds and PBDE all identified as the failing classification elements.

5.2.20 Implementation of the embedded environmental measures will largely remove the sources of any adverse effects (during all phases of the Proposed Development) that may have potential to cause deterioration in WFD status (**Table 5-9**). All residual effects are considered to be short duration in relation to the RBMP planning timescales (six years) and/or negligible in relation to the Adur transitional water body as a whole. Therefore, in the case of the Adur transitional water body (GB540704116000), the Proposed Development is considered to be compliant with the objectives of the WFD.

Adur (Lockbridge) GB107041012200

5.2.21 Based on the results of the screening and scoping assessment (**Annex B**), activities may pose a risk to the WFD status and objectives in this water body for the elements listed in **Table 5-10**. A summary of the further assessment for the Adur (Lockbridge) river water body, taking account of embedded environmental measures is presented within **Annex C**.

Table 5-10 Summary of the further assessment results, from onshore activities, for the Adur (Lockbridge) river water body

WFD element scoped in	Summary of further assessment (presented in Annex C)
Hydromorphological Supporting Elements – all sub-elements, specifically structure and substrate of the river bed **Physico – Chemical Quality Elements – Ammonia** **Phosphate** **Dissolved oxygen** **Temperature** **Chemical Quality Elements – Specific Pollutants, Priority substances and Priority Hazardous substances** **Biological Quality Elements – Fish, macrophytes, phytobenthos, and invertebrates**	**Annex C** provides a comprehensive summary of the effects of activities / infrastructure on each WFD classification element. The embedded environmental measures summarised in **Table 5-1** will be sufficient to ensure that any effects will not lead to deterioration in WFD status for any stage of the Proposed Development.

5.2.22 The Adur (Lockbridge) river water body (GB107041012200) is currently designated as having Poor ecological status with fish, macrophytes and phytobenthos, dissolved oxygen and phosphate identified as the elements preventing the attainment of Good status. The Adur (Lockbridge) is also currently designated as failing chemical status with mercury and its compounds, and PBDE identified as the failing classification elements. The waterbody has an objective to achieve Good status by 2027.

5.2.23 Implementation of the embedded environmental measures will largely remove the sources of any adverse effects (during all phases of the Proposed Development) that may have potential to cause deterioration in WFD status (**Table 5-10**). All residual effects are considered to be short duration in relation to the RBMP planning timescales (six years) and/or negligible in relation to the Adur (Lockbridge) river water body as a whole. Therefore, in the case of the Adur (Lockbridge) WFD water body (GB107041012200), the Proposed Development is considered to be compliant with the objectives of the WFD.

Adur East (Sakeham) GB107041012900

5.2.24 Based on the results of the screening and scoping assessment (**Annex B**), activities may pose a risk to the WFD status and objectives in this water body for the elements listed in **Table 5-11**. A summary of the further assessment for the Adur East (Sakeham) river water body, taking account of embedded environmental measures is presented within **Annex C**.

Table 5-11 Summary of the further assessment results, from onshore activities, for the Adur East (Sakeham) river water body

WFD element scoped in	Summary of further assessment (presented in Annex C)
Hydromorphological Supporting Elements – all sub-elements, specifically structure and substrate of the river bed **Physico – Chemical Quality Elements – Ammonia** **Phosphate** **Dissolved oxygen** **Temperature** **Chemical Quality Elements – Specific Pollutants, Priority substances and Priority Hazardous substances** **Biological Quality Elements – Fish, macrophytes, phytobenthos, and invertebrates**	**Annex C** provides a comprehensive summary of the effects of activities / infrastructure on each WFD classification element. The embedded environmental measures summarised in **Table 5-1** will be sufficient to ensure that any effects will not lead to deterioration in WFD status for any stage of the Proposed Development.

5.2.25 The Adur East (Sakeham) WFD water body (GB107041012900) is currently designated as having Poor ecological status with fish, macrophytes and phytobenthos and phosphate identified as the elements preventing the attainment of good status. The Adur East (Sakeham) is also currently designated as failing chemical status with mercury and its compounds, Benzo(g-h-i)perylene and PBDE identified as the failing classification elements. The waterbody has an objective to achieve Good status by 2027.

5.2.26 Implementation of the embedded environmental measures will largely remove the sources of any adverse effects (during all phases of the Proposed Development) that may have potential to cause deterioration in WFD status (**Table 5-11**). All residual effects are considered to be short duration in relation to the RBMP planning timescales (six years) and/or negligible in relation to the Adur East (Sakeham) river water body as a whole. Therefore, in the case of the Adur East

(Sakeham) WFD water body (GB107041012900), the Proposed Development is considered to be compliant with the objectives of the WFD. On the same basis, it can also be concluded that the Proposed Development will not have any adverse effects on the objectives of the Adur East (Sakeham) NVZ or UKENRI146 which lie within parts of the Adur East (Sakeham) WFD water body.

Cowfold Stream GB107041012260

5.2.27 Based on the results of the screening and scoping assessment (**Annex B**), activities may pose a risk to the WFD status and objectives in this water body for the elements listed in **Table 5-12**. A summary of the further assessment for the Cowfold Stream river water body, taking account of embedded environmental measures is presented within **Annex C**.

Table 5-12 Summary of the further assessment results, from onshore activities, for the Cowfold Stream river water body

WFD element scoped in	Summary of further assessment (presented in Annex C)
Hydromorphological Supporting Elements – all sub-elements, specifically structure and substrate of the river bed **Physico – Chemical Quality Elements – Ammonia** **Phosphate** **Dissolved oxygen** **Temperature** **Chemical Quality Elements – Specific Pollutants, Priority substances and Priority Hazardous substances** **Biological Quality Elements – Fish, macrophytes, phytobenthos, and invertebrates**	**Annex C** provides a comprehensive summary of the effects of these activities / infrastructure on each WFD classification element. The embedded environmental measures summarised in **Table 5-1** will be sufficient to ensure that any effects will not lead to deterioration in WFD status for any stage of the Proposed Development.

5.2.28 The Cowfold Stream WFD water body (GB107041012260) is currently designated as having Poor ecological status with macrophytes and phytobenthos and phosphate identified as the elements preventing the attainment of Good status. The Cowfold Stream is also currently designated as failing chemical status with mercury and its compounds, and PBDE identified as the failing classification elements. The waterbody has an objective to achieve Good status by 2027.

5.2.29 Implementation of the embedded environmental measures will largely remove the sources of any adverse effects (during all phases of the Proposed Development) that may have potential to cause deterioration in WFD status (**Table 5-12**). All residual effects are considered to be short duration in relation to the RBMP planning timescales (six years) and/or negligible in relation to the Cowfold Stream river water body as a whole. Therefore, in the case of the Cowfold Stream WFD water body (GB107041012260), the Proposed Development is considered to be compliant with the objectives of the WFD. On the same basis, it can also be concluded that the Proposed Development will not have any adverse effects on the objectives of the Adur East (Sakeham) NVZ which lie within part of the Cowfold Stream WFD Water Body.

Adur East GB107041012180

5.2.30 Based on the results of the screening and scoping assessment (**Annex B**), activities may pose a risk to the WFD status and objectives in this water body for the elements listed in **Table 5-13**. A summary of the further assessment for the Adur East river water body, taking account of embedded environmental measures is presented within **Annex C**.

Table 5-13 Summary of the further assessment results, from onshore activities, for the Adur East river water body

WFD element scoped in	Summary of further assessment (presented in Annex C)
Hydromorphological Supporting Elements – all sub-elements, specifically structure and substrate of the river bed **Physico – Chemical Quality Elements – Ammonia** **Phosphate** **Dissolved oxygen** **Temperature** **Chemical Quality Elements – Specific Pollutants, Priority substances and Priority Hazardous substances** **Biological Quality Elements – Fish, macrophytes, phytobenthos, and invertebrates**	**Annex C** provides a comprehensive summary of the effects of activities / infrastructure on each WFD classification element. The embedded environmental measures summarised in **Table 5-1** will be sufficient to ensure that any effects will not lead to deterioration in WFD status for any stage of the Proposed Development.

5.2.31 The Adur East WFD water body (GB107041012180) is currently designated as having Poor ecological status with fish macrophytes and phytobenthos, dissolved oxygen and phosphate identified as the elements preventing the attainment of good status. The Adur East is also currently designated as failing chemical status with mercury and its compounds, and PBDE identified as the failing classification elements. The waterbody has an objective to achieve Good status by 2027.

5.2.32 Implementation of the embedded environmental measures will largely remove the sources of any adverse effects (during all phases of the Proposed Development) that may have potential to cause deterioration in WFD status (**Table 5-13**). All residual effects are considered to be short duration in relation to the RBMP planning timescales (six years) and/or negligible in relation to the Adur East river water body as a whole. Therefore, in the case of the Adur East WFD water body (GB107041012180), the Proposed Development is considered to be compliant with the objectives of the WFD. On the same basis it can also be concluded that the Proposed Development will not have any adverse effects on the objectives of the Adur East (Sakeham) NVZ or UKENRI146 which lie within parts of the Adur East WFD water body.

5.3 Groundwater bodies

Introduction

5.3.1 This Section provides a summary of the assessments that were carried out in **Annex C** for all groundwater bodies and activities that were screened and scoped in.

Littlehampton Anticline West GB40701G504900

5.3.2 Based on the results of the screening and scoping assessment (**Annex B**), activities may pose a risk to the WFD status and objectives in this water body for the elements listed in **Table 5-14**. A summary of the further assessment for the Littlehampton Anticline West groundwater water body, taking account of embedded environmental measures is presented within **Annex C**.

Table 5-14 Summary of the further assessment results, from onshore activities, for the Littlehampton Anticline West groundwater water body

WFD element scoped in	Summary of further assessment (presented in Annex C)
Groundwater Level Elements – Quantitative dependent surface water body status and Groundwater dependent terrestrial ecosystems (GWDTEs) **Groundwater Chemical Elements – GWDTEs and General chemical test**	**Annex C** provides a comprehensive summary of the effects of activities / infrastructure on each WFD classification element. The embedded environmental measures summarised in **Table 5-1** will be sufficient to ensure that any effects will not lead to deterioration in WFD status for any stage of the Proposed Development.

5.3.3 The Littlehampton Anticline West groundwater water body (GB40701G504900) is currently designated as having Good quantitative and chemical status. Therefore, there is no requirement for this water body to achieve an improvement in WFD status.

5.3.4 Implementation of the embedded environmental measures will largely remove the sources of any adverse effects (during all phases of the Proposed Development) that may have potential to cause deterioration in WFD status (**Table 5-14**). All residual effects are considered to be short duration in relation to the RBMP planning timescales (six years) and / or negligible in relation to the Littlehampton Anticline West groundwater water body as a whole. Therefore, in the case of the Littlehampton Anticline West groundwater water body (GB40701G504900), the Proposed Development is considered to be compliant with the objectives of the WFD. On the same basis, it can also be concluded that the Proposed Development will not have any adverse effects on the objectives of the Sussex Chalk G56 Nitrates Directive protected area or the Littlehampton Anticline West DWPA which lie within parts of the Littlehampton Anticline West groundwater water body.

Littlehampton Anticline East GB40701G503400

5.3.5 Based on the results of the screening and scoping assessment (**Annex B**), activities may pose a risk to the WFD status and objectives in this water body for the elements listed in **Table 5-15**. A summary of the further assessment for the Littlehampton Anticline East groundwater water body, taking account of embedded environmental measures is presented within **Annex C**.

Table 5-15 Summary of the further assessment results, from onshore activities, for the Littlehampton Anticline East groundwater water body

WFD element scoped in	Summary of further assessment (presented in Annex C)
Groundwater Level Elements – Quantitative dependent surface water body status and GWDTEs **Groundwater Chemical Elements – GWDTEs and General chemical test**	**Annex C** provides a comprehensive summary of the effects of activities / infrastructure on each WFD classification element. The embedded environmental measures summarised in **Table 5-1** will be sufficient to ensure that any effects will not lead to deterioration in WFD status for any stage of the Proposed Development.

5.3.6 The Littlehampton Anticline East groundwater water body (GB40701G503400) is currently designated as having Good quantitative and chemical status. Therefore, there is no requirement for this water body to achieve an improvement in WFD status.

5.3.7 Implementation of the embedded environmental measures will largely remove the sources of any adverse effects (during all phases of the Proposed Development) that may have potential to cause deterioration in WFD status (**Table 5-15**). All residual effects are considered to be short duration in relation to the RBMP planning timescales (six years) and/or negligible in relation to the Littlehampton Anticline East groundwater water body as a whole. Therefore, in the case of the Littlehampton Anticline East groundwater water body (GB40701G503400), the Proposed Development is considered to be compliant with the objectives of the WFD. On the same basis, it can also be concluded that the Proposed Development will not have any adverse effects on the objectives of the Sussex Chalk G56 Nitrates Directive protected area or the Littlehampton Anticline East DWPA which lie within parts of the Littlehampton Anticline East groundwater water body.

Sussex Lambeth Group GB40701G505100

5.3.8 Based on the results of the screening and scoping assessment (**Annex B**), activities may pose a risk to the WFD status and objectives in this water body for the elements scoped in and listed in **Table 5-16**. A summary of the further assessment for the Sussex Lambeth Group groundwater water body, taking account of embedded environmental measures is presented within **Annex C**.

Table 5-16 Summary of the further assessment results, from onshore activities, for the Sussex Lambeth Group groundwater water body

WFD element scoped in	Summary of further assessment (presented in Annex C)
Groundwater Level Elements – Quantitative dependent surface water body status and GWDTEs **Groundwater Chemical Elements – GWDTEs and General chemical test**	**Annex C** provides a comprehensive summary of the effects of activities / infrastructure on each WFD classification element. The embedded environmental measures summarised in **Table 5-1** will be sufficient to ensure that any effects will not lead to deterioration in WFD status for any stage of the Proposed Development.

5.3.9 The Sussex Lambeth Group groundwater water body (GB40701G505100) is currently designated as having Good quantitative and chemical status. Therefore, there is no requirement for this water body to achieve an improvement in WFD status.

5.3.10 Implementation of the embedded environmental measures will largely remove the sources of any adverse effects (during all phases of the Proposed Development) that may have potential to cause deterioration in WFD status (**Table 5-16**). All residual effects are considered to be short duration in relation to the RBMP planning timescales (six years) and/or negligible in relation to the Sussex Lambeth Group groundwater water body as a whole. Therefore, in the case of the Sussex Lambeth Group groundwater water body (GB40701G505100), the Proposed

Development is considered to be compliant with the objectives of the WFD. On the same basis, it can also be concluded that the Proposed Development will not have any adverse effects on the objectives of the Sussex Chalk G56 Nitrates Directive protected area or the Sussex Lambeth Group DWPA which lie within parts of the Sussex Lambeth Group groundwater water body.

Worthing Chalk GB40701G505300

5.3.11 Based on the results of the screening and scoping assessment (**Annex B**), activities may pose a risk to the WFD status and objectives in this water body for the elements scoped in and listed in **Table 5-17**. A summary of the further assessment for the Worthing Chalk groundwater water body, taking account of embedded environmental measures is presented within **Annex C**.

Table 5-17 Summary of the further assessment results, from onshore activities, for the Worthing Chalk groundwater water body

WFD element scoped in	Summary of further assessment (presented in Annex C)
Groundwater Level Elements – Quantitative dependent surface water body status and GWDTEs **Groundwater Chemical Elements – GWDTEs and General chemical test**	**Annex C** provides a comprehensive summary of the effects of activities / infrastructure on each WFD classification element. The embedded environmental measures summarised in **Table 5-1** will be sufficient to ensure that any effects will not lead to deterioration in WFD status for any stage of the Proposed Development.

5.3.12 The Worthing Chalk groundwater water body (GB40701G505300) is currently designated as having Poor quantitative and chemical status, with an overall objective of achieving Good status by 2027. The classification elements achieving less than Good status were the quantitative dependant surface water body status, chemical drinking water protected area and general chemical test, with poor nutrient management and groundwater abstraction being identified as the main activities responsible for pressures on diffuse sources of pollution and flow availability.

5.3.13 Implementation of the embedded environmental measures will largely remove the sources of any adverse effects (during all phases of the Proposed Development) that may have potential to cause deterioration in WFD status (**Table 5-17**). All residual effects are considered to be short duration in relation to the RBMP planning timescales (six years) and/or negligible in relation to the Worthing Chalk groundwater water body as a whole. Therefore, in the case of the Worthing Chalk groundwater water body (GB40701G505300), the Proposed Development is considered to be compliant with the objectives of the WFD. On the same basis, it can also be concluded that the Proposed Development will not have any adverse effects on the objectives of the Sussex Chalk G56 Nitrates Directive protected area, the Worthing Chalk DWPA and associated public water supply safeguard

zones (for example, Patching, Sompting, Burpham, Findon, Stanhope Lodge and Northbrook) which all lie within parts of the Worthing Chalk groundwater water body.

Lower Greensand Adur and Ouse GB40701G502400

5.3.14 Based on the results of the screening and scoping assessment (**Annex B**), activities may pose a risk to the WFD status and objectives in this water body for the elements listed in **Table 5-18**. A summary of the further assessment for the Lower Greensand Adur and Ouse groundwater water body, taking account of embedded environmental measures is presented within **Annex C**.

Table 5-18 Summary of the further assessment results, from onshore activities, for the Lower Greensand Adur and Ouse groundwater water body

WFD element scoped in	Summary of further assessment (presented in Annex C)
Groundwater Level Elements – Quantitative dependent surface water body status and GWDTEs **Groundwater Chemical Elements – GWDTEs and General chemical test**	**Annex C** provides a comprehensive summary of the effects of activities / infrastructure on each WFD classification element. The embedded environmental measures summarised in **Table 5-1** will be sufficient to ensure that any effects will not lead to deterioration in WFD status for any stage of the Proposed Development.

5.3.15 The Lower Greensand Adur and Ouse groundwater water body (GB40701G502400) is currently designated as having Good quantitative and chemical status. Therefore, there is no requirement for this water body to achieve an improvement in WFD status.

5.3.16 Incorporation of the embedded environmental measures will largely remove the sources of any adverse effects (during all phases of the Proposed Development) that may have potential to cause deterioration in WFD status (**Table 5-18**). All residual effects are considered to be short duration in relation to the RBMP planning timescales (six years) and/or negligible in relation to the Lower Greensand Adur and Ouse groundwater water body as a whole. Therefore, in the case of the Lower Greensand Adur and Ouse groundwater water body (GB40701G502400), the Proposed Development is considered to be compliant with the objectives of the WFD. On the same basis, it can also be concluded that the Proposed Development will not have any adverse effects on the Lower Greensand Adur and Ouse DWPA which lies within the Lower Greensand Adur and Ouse groundwater water body.

Adur & Ouse Hastings Beds GB40702G502000

5.3.17 Based on the results of the screening and scoping assessment (**Annex B**), activities may pose a risk to the WFD status and objectives in this water body for

the elements listed in **Table 5-19**. A summary of the further assessment for the Adur & Ouse Hastings Beds groundwater water body, taking account of embedded environmental measures is presented within **Annex C**.

Table 5-19 Summary of the further assessment results, from onshore activities, for the Adur & Ouse Hastings Beds groundwater water body.

WFD element scoped in	Summary of further assessment (presented in Annex C)
Groundwater Level Elements – Quantitative dependent surface water body status and GWDTEs **Groundwater Chemical Elements – GWDTEs and General chemical test**	**Annex C** provides a comprehensive summary of the effects of activities / infrastructure on each WFD classification element. The embedded environmental measures summarised in **Table 5-1** will be sufficient to ensure that any effects will not lead to deterioration in WFD status for any stage of the Proposed Development.

5.3.18 The Adur & Ouse Hastings Beds groundwater water body (GB40702G502000) is currently designated as having Good quantitative and chemical status. Therefore, there is no requirement for this water body to achieve an improvement in WFD status.

5.3.19 Incorporation of the embedded environmental measures will largely remove the sources of any adverse effects (during all phases of the Proposed Development) that may have potential to cause deterioration in WFD status (**Table 5-18**). All residual effects are considered to be short duration in relation to the RBMP planning timescales (six years) and/or negligible in relation to the Adur & Ouse Hastings Beds groundwater water body as a whole. Therefore, in the case of the Adur & Ouse Hastings Beds groundwater water body (GB40702G502000), the Proposed Development is considered to be compliant with the objectives of the WFD. On the same basis, it can also be concluded that the Proposed Development will not have any adverse effects on the Adur & Ouse Hastings Beds DWPA which lies within the Adur & Ouse Hastings Beds groundwater water body.

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6. Conclusions on WFD compliance

6.1 Overview

6.1.1 Of the 19 water bodies in the Study Area, a total of 16 were considered to have Proposed Development activities / infrastructure types within them or in close enough proximity that will cause some degree of risk to the delivery of WFD objectives. Upon further assessment of these activities and infrastructure types and taking into account the effectiveness of the embedded environmental measures to manage any effects, it is concluded that the Proposed Development is compliant with the WFD.

6.2 Will the Proposed Development lead to deterioration in WFD status of any WFD water body in the Study Area?

6.2.1 Based on the assessment provided in this Appendix (within **Annex C** and **Section 5**), no components or phases of the Proposed Development will lead to a deterioration in WFD Status.

6.3 Will the Proposed Development compromise the achievement of Good Status in any WFD water body in the Study Area?

6.3.1 Based on the assessment provided in this Appendix (within **Annex C** and **Section 5**) no components or phases of the Proposed Development will compromise the ability of any WFD water body to attain WFD target status.

6.4 Will the Proposed Development compromise the achievement of Protected Area objectives?

6.4.1 Based on the assessment provided in **Chapter 22: Terrestrial ecology and nature conservation, Volume 2**, (Document Reference: 6.2.22) of the ES, the **Report to Inform Appropriate Assessment** (Document Reference: 5.9), and the findings of this Appendix (within **Annex C** and **Section 5**), no components or phases of the Proposed Development will compromise the conservation objectives of any Protected Area.

6.5 Statement of WFD compliance

6.5.1 The WFD Compliance Assessment provided in this Appendix (and supporting annexes (**Annex A**, **Annex B** and **Annex C**)) demonstrates that the Proposed Development is compliant with the objectives of the WFD. Therefore, there is no requirement for an Article 4.7 assessment.

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7. Glossary of terms and abbreviations

Term (Acronym)	Definition
AWBs	Artificial water bodies
BWD	Bathing Water Directive
Centre for Environment, Fisheries and Aquaculture Science (Cefas)	The Government's marine and freshwater science experts, advising the UK government and overseas partners.
Development Consent Order (DCO)	This is the means of obtaining permission for developments categorised as Nationally Significant Infrastructure Projects, under the Planning Act 2008.
Defra	Department for Environment, Food and Rural Affairs
DWPA	Drinking Water Protected Area
E. coli	*Escherchia coli*
Environmental Impact Assessment (EIA)	The process of evaluating the likely significant environmental effects of a proposed project or development over and above the existing circumstances (or 'baseline').
EPP	Evidence Plan Process
EQS	Environmental Quality Standards
EQSD	Environmental Quality Standards Directive
Environmental Statement (ES)	The written output presenting the full findings of the Environmental Impact Assessment.
ETG	Expert Topic Group
EU	European Union
GEP	Good ecological potential

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Term (Acronym)	Definition
GES	Good ecological status
GWDTE	Groundwater dependent terrestrial ecosystems
Horizontal Directional Drill (HDD)	An engineering technique avoiding open trenches.
HeRA	Helicopter Refuge Area
HMWBs	Heavily modified water bodies
IDB	Internal Drainage Board
IMO	International Maritime Organisation
INNS	Invasive non-native species
km	kilometre
LLFA	Lead Local Flood Authority
m	metre
mbgl	metres below ground level
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
N/A	Not applicable
NGR	National Grid Reference
nm	nautical mile
Nationally Significant Infrastructure Project (NSIP)	Nationally Significant Infrastructure Projects are major infrastructure developments in England and Wales which are consented by DCO. These include proposals for renewable energy projects with an installed capacity greater than 100MW.
NVZ	Nitrate Vulnerable Zone

Term (Acronym)	Definition
OCNS	Offshore Chemical Notification Scheme
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
PBDE	Polybrominated diphenyl ethers
Preliminary Environmental Information Report (PEIR)	The written output of the Environmental Impact Assessment undertaken to date for the Proposed Development. It is developed to support Statutory Consultation and presents the preliminary findings of the assessment to allow an informed view to be developed of the Proposed Development, the assessment approach that has been undertaken, and the preliminary conclusions on the likely significant effects of the Proposed Development and environmental measures proposed.
PEMP	Project Environmental Management Plan
Percentile values	A percentile is a measure used in statistics indicating the value below which a given percentage of observations in a group of observations fall.
PLONOR	Pose Little or No Risk to the Environment
RBMP	River Basin Management Plan
rBWD	revised Bathing Water Directive
Special Area of Conservation (SAC)	International designation implemented under the Habitats Regulations for the protection of habitats and (non-bird) species. Sites designated to protect habitats and species on Annexes I and II of the Habitats Directive. Sufficient habitat to maintain favourable conservation status of the particular feature in each member state needs to be identified and designated.
SPA	Special Protection Area
SSC	Suspended Sediment Concentrations
TJB	Transition Joint Bay
TraC	Transitional and Coastal Waters
UK	United Kingdom

Term (Acronym)	Definition
UKTAG	UK Technical Advisory Group
WFD	Water Framework Directive
WSCC	West Sussex County Council
WTGs	Wind Turbine Generators
XLPE	Cross-linked polyethylene

8. References

BERR, (2008). *Review of Cabling Techniques and Environmental Effects applicable to the Offshore Wind Farm Industry.' Department for Business Enterprise and Regulatory Reform in association with Defra*.

Centre for Environment, Fisheries and Aquaculture Science (Cefas), (2020). *Offshore Chemical Notification Scheme operated by Cefas.* [Online]. Available at: https://www.cefas.co.uk/cefas-data-hub/offshore-chemical-notification-scheme/hazard-assessment/ [Accessed 02 June 2023].

Council Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 on establishing a framework for Community action in the field of water policy (the Water Framework Directive). [online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32000L0060 [Accessed 02 June 2023].

Council Directive 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on environmental quality standards in the field of water policy, amending and subsequently repealing Council Directives 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC and amending Directive 2000/60/EC of the European Parliament and of the Council (the Priority Substances Directive). [online] Available at: https://eur-lex.europa.eu/eli/dir/2008/105/oj [Accessed 02 June 2023].

Council Directive 2013/39/EU of the European Parliament and of the Council of 12 August 2013 amending Directives 2000/60/EC and 2008/105/EC as regards priority substances in the field of water policy. [online] Available at: https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32013L0039 [Accessed 02 June 2023].

Council Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration (the Groundwater Directive) including Commission Directive 2014/80/EU which amends Annex II of the original Directive 2006/118/EC. [online] Available at: https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32013L0039 [Accessed 02 June 2023].

Council Directive 76/160/EEC of 8 December 1975 concerning the quality of bathing water. [online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31976L0160 [Accessed 02 June 2023].

Department for Environment, Food and Rural Affairs (Defra), (2023). *Magic online mapping tool.* [online]. Available at: https://magic.defra.gov.uk/ [Accessed 26 July 2023].

Directive 2006/7/EC of the European Parliament and of the Council of 15 February 2006 concerning the management of bathing water quality and repealing Directive 76/160/EEC. [online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02006L0007-20140101 [Accessed 02 June 2023].

Environment Agency, (2015). *River Basin Management Plans Published 2015 – 2021.* [Online]. Available at: https://www.gov.uk/government/collections/river-basin-management-plans-2015 [Accessed 02 June 2023].

Environment Agency, (2017). *Clearing the waters for All.* [online]. Available at: https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters [Accessed 02 June 2023].

Environment Agency (2021). *Sensitive Areas - Eutrophic Coastal* [online]. Available at: https://data.gov.uk/dataset/0f20d4e2-6811-48c7-b876-ad1287f08dcb/sensitive-areas-eutrophic-coastal [Accessed: 25 May 2023].

Environment Agency, (2015). *Position 488_10 Protecting and improving the water environment: WFD compliance of physical works in rivers*. Environment Agency; Bristol.

European Commission, (1991a). *Council Directive of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources (91/676/EEC)*. [online]. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1561542776070&uri=CELEX:01991L0676-20081211. [Accessed 02 June 2023].

European Commission, (1991b). *Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment.* [online]. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31991L0271 [Accessed 02 June 2023].

EMU, (2011). *Rampion OWF benthic ecology baseline characterisation*. EMU; London

OSPAR, (2019). '*OSPAR List of Substances Used and Discharged Offshore which Are Considered to Pose Little or No Risk to the Environment'.* [online]. Available from: https://www.ospar.org/work-areas/oic/chemicals. [Accessed 02 June 2023].

Paloniitty, T (2016). *The Weser Case: Case C-461/13 BUND V GERMANY*, Journal of Environmental Law, Volume 28, Issue 1, March 2016, Pages 151–158.

Planning Act 2008. [online] Available at: https://www.legislation.gov.uk/ukpga/2008/29/contents [Accessed 02 June 2023].

Planning Inspectorate, (2020). *Scoping Opinion: Proposed Rampion 2 Offshore Wind Farm. Case Reference EN010117*, [online]. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010117/EN010117-000045-EN010117 Scoping Opinion.pdf [Accessed 02 June 2023].

Rampion Extension Development Limited (RED), (2020). *Rampion 2 Offshore Wind Farm Environmental Impact Assessment Scoping Report.* [Online]. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010117/EN010117-000006-EN010117%20-%20Scoping%20Report.pdf [Accessed 26 July 2023]

Rampion Extension Development Limited (RED), (2021). *Preliminary Environmental Information* Report. [Online] Available at: https://rampion2.com/consultations-2021/formal-consultation-detailed-documents/ [Accessed 07 June 2023].

UK Technical Advisory Group on the Water Framework Directive, (2012). *Paper 11b(i) Groundwater Chemical Classification for the purposes of the Water Framework Directive and the Groundwater Directive.* [online] Available at: https://www.daera-ni.gov.uk/sites/default/files/publications/doe/uktag-groundwater-chemical-classification.PDF [Accessed 02 June 2023].

The Environmental Permitting (England and Wales) Regulations 2016. [online] Available at: https://www.legislation.gov.uk/uksi/2016/1154/contents/made [Accessed 02 June 2023].

The Planning Inspectorate, (2017). *Advice Note 18: The Water Framework Directive.* [online]. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2017/06/advice_note_18.pdf [Accessed 02 June 2023].

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. [online] Available at: https://www.legislation.gov.uk/uksi/2017/407/contents [Accessed 02 June 2023].

The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015. [online] Available at: https://www.legislation.gov.uk/uksi/2015/1623/pdfs/uksiod_20151623_en_auto.pdf [Accessed 02 June 2023].

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Annex A
Baseline WFD data

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Table A-1 Baseline WFD Data

Water body ID / management catchment	Water body type	Approximate length of principal water course (km)	Approximate catchment area (km^2)	Status	*HMWB[11] / AWB[12]	Supporting elements, less than Good Status / Potential	Issues preventing the attainment of Good Status	Objective
Ryebank Rife (GB107041006620) Arun and Western Streams	River	7.4	13.2	Moderate Ecological Potential, Fail Chemical Status (2019)	-	Dissolved oxygen Priority hazardous substances (Mercury and its Compounds and Polybrominated diphenyl ethers (PBDE) – Fail	Drought PBDE and Mercury conditions will take time to achieve chemical recovery	Good by 2027 (ecological) Good by 2063 (chemical; natural conditions)
Black Ditch (West Sussex) GB107041012890 Arun and Western Streams	River	8.7	46.5	Poor Ecological Potential, Fail Chemical Status (2019)	-	Biological quality elements (Fish - Poor, Macrophytes and Phytobenthos Combined – Moderate) Physico-chemical quality elements (Dissolved oxygen) – Fail Priority hazardous substances (Mercury and its Compounds and PBDE – Fail	Low flow Reservoir/ Impoundment PBDE and Mercury conditions will take time to achieve chemical recovery Natural conditions - sediment and morphology Land drainage – operational management	Good by 2027 (ecological) Good by 2063 (chemical; natural conditions)
Burpham Tributary (River Arun) GB107041011990 Arun and Western Streams	River	1.5	10.5	Moderate Ecological Status, Fail Chemical Status (2019)	-	Physico-chemical quality elements (Dissolved oxygen) – Fail Hydromorphological Supporting Elements (Hydrological Regime) – Does not support good Priority hazardous substances (Mercury and its Compounds, Perfluorooctane sulphonate (PFOS) and PBDE – Fail	Unknown (pending Environment Agency investigation) PBDE, PFOS and Mercury conditions will take time to achieve chemical recovery	Good by 2027 (ecological) Good by 2063 (chemical; natural conditions)

[11]Heavily Modified Water body (HMWB) are bodies of water which as a result of physical alterations by human activity are substantially changed in character and cannot, therefore, meet "good ecological status" (GES). In this context physical alterations mean changes to e.g. the size, slope, discharge, form and shape of river bed of a water body

[12] Artificial Water body (AWB) are surface water bodies which have been created in a location where no water body existed before and which have not been created by the direct physical alteration, movement or realignment of an existing water body

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Water body ID / management catchment	Water body type	Approximate length of principal water course (km)	Approximate catchment area (km^2)	Status	*HMWB[11] / AWB[12]	Supporting elements, less than Good Status / Potential	Issues preventing the attainment of Good Status	Objective
Littlehampton Anticline East GB40701G503400	Groundwater	-	38.9	Poor Quantitative Status, Good Chemical Status (2019)	-	Quantitative Dependent Surface Water Body Status	Unknown – under investigation	Good by 2027
Littlehampton Anticline West GB40701G504900	Groundwater	-	41.2	Good Quantitative Status, Good Chemical Status (2019)		N/A	N/A	N/A
Sussex Lambeth Group GB40701G505100	Groundwater	-	71.6	Good Quantitative Status, Good Chemical Status (2019)		N/A	N/A	N/A
Worthing Chalk GB40701G505300	Groundwater	-	135.5	Poor Quantitative Status, Poor Chemical Status (2019)		Quantitative Status Element (Quantitative Dependent Surface Water Body Status) – Poor Chemical Status Element (Chemical Drinking Water Protected Area and General Chemical Test) – Poor	Poor nutrient management – Agriculture and rural land management. Groundwater abstraction – water supply	Good by 2027
Stor Arun and Western Streams GB107041012100	River	4.9	20.1	Moderate Ecological Status, Fail Chemical Status (2019)		Physico-chemical quality elements (phosphate) – Poor Priority hazardous substances (Mercury and its Compounds and PBDE – Fail	Water industry - sewage discharge (continuous) Agriculture and rural land management - poor nutrient management PBDE and Mercury conditions will take time to achieve chemical recovery	Good by 2027
Honeybridge Stream GB107041012120 Adur and Ouse	River	7.2	22.8	Poor Ecological Status, Fail Chemical Status (2019)	-	Biological quality elements (Fish – Poor, Macrophytes and Phytobenthos Combined – Moderate)	Physical modifications from land drainage – agriculture and land management	Good by 2027

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Water body ID / management catchment	Water body type	Approximate length of principal water course (km)	Approximate catchment area (km^2)	Status	*HMWB[11] / AWB[12]	Supporting elements, less than Good Status / Potential	Issues preventing the attainment of Good Status	Objective
						Physico-chemical quality elements (Phosphate) – Poor Priority hazardous substances (Mercury and its Compounds and PBDE – Fail	PBDE and Mercury conditions will take time to achieve chemical recovery Poor nutrient management agriculture and land management Sewage discharge (continuous) – water industry	
Adur Lockbridge GB107041012200 Adur and Ouse	River	6.0	15.1	Poor Ecological Status, Fail Chemical Status (2019)	-	Biological quality elements (Fish – Poor, Macrophytes and Phytobenthos Combined – Moderate) Physico-chemical quality elements (Dissolved Oxygen – Bad, Phosphate – Moderate) Priority hazardous substances (Mercury and its Compounds, PFOS and PBDE – Fail	PBDE, PFOS and Mercury conditions will take time to achieve chemical recovery Private sewage treatment – domestic general/public Sewage discharge – water industry Poor livestock management – agriculture and rural land management Physical modification – inland boating and structures, ecological barriers and flood protection	Good by 2027
Adur East (Sakeham) GB107041012900 Adur and Ouse	River	6.6	18.6	Poor Ecological Status, Fail Chemical Status (2019)	-	Biological quality elements (Fish – Poor, Macrophytes and Phytobenthos Combined – Moderate) Physico-chemical quality elements (Phosphate) – Bad Priority hazardous substances (Mercury and its Compounds, Benzo(g-h-i)perylene and PBDE – Fail	PBDE, Benzo(g-h-i)perylene and Mercury conditions will take time to achieve chemical recovery Sewage discharge (continuous) – waste water treatment Poor nutrient management – agriculture and rural land management Physical modification – reservoir /	Good by 2027

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Water body ID / management catchment	Water body type	Approximate length of principal water course (km)	Approximate catchment area (km^2)	Status	*HMWB[11] / AWB[12]	Supporting elements, less than Good Status / Potential	Issues preventing the attainment of Good Status	Objective
							impoundment (non flow related) and ecological barriers	
Adur East, GB107041012180 Adur and Ouse	River	2.7	3.2	Moderate Ecological Status, Fail Chemical Status (2019)		Biological quality elements (Fish and Macrophytes and Phytobenthos Combined) – Moderate Physico-chemical quality elements (Dissolved Oxygen – Moderate, Phosphate – Bad) Priority hazardous substances (Mercury and its Compounds and PBDE – Fail	Poor nutrient management – Agriculture and rural land management Sewage discharge - Waste water treatment Physical modification – ecological barriers PBDE and Mercury conditions will take time to achieve chemical recovery	Good by 2027
Cowfold Stream GB107041012260 Adur and Ouse	River	9.4	30.8	Poor Ecological Status, Fail Chemical Status (2019)	-	Biological quality elements (Macrophytes and Phytobenthos Combined) - Poor Physico-chemical quality elements (Phosphate) – Moderate Priority hazardous substances (Mercury and its Compounds and PBDE – Fail	Poor nutrient management – Agricultural and rural land management Sewage discharge (continues) – Water industry PBDE and Mercury conditions will take time to achieve chemical recovery	Good by 2027
Bolney Sewer GB107041012250 Adur and Ouse	River	2.49	14.5	Moderate Ecological Status, Fail Chemical Status (2019)	-	Biological quality elements (Macrophytes and Phytobenthos Combined) – Moderate Physico-chemical quality elements (Dissolved oxygen) – Moderate Priority hazardous substances (Mercury and its Compounds and PBDE – Fail	Poor nutrient management – Agricultural and rural land management Natural conditions PBDE and Mercury conditions will take time to achieve chemical recovery	Good by 2027
Lower Greensand GB40701G502400 Adur and Ouse	Groundwater	-	51.2	Good Quantitative Status, Good	-	N/A	N/A	N/A already at Good status

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Water body ID / management catchment	Water body type	Approximate length of principal water course (km)	Approximate catchment area (km^2)	Status	*HMWB[11] / AWB[12]	Supporting elements, less than Good Status / Potential	Issues preventing the attainment of Good Status	Objective
				Chemical Status (2019)				
Adur & Ouse Hastings Beds GB40702G502000	Groundwater	-	351.1	Good Quantitative Status, Good Chemical Status (2019)		N/A	N/A	N/A already at Good status
Arun GB540704105000 South East TraC	Transitional (HMWB – Flood Protection)	-	1.246 (surface area)	Moderate Ecological Potential, Fail Chemical Status (2019)	HMWB	Mitigation measures assessment – Moderate or less Priority hazardous substances (Mercury and its Compounds and PBDE – Fail	Physical modifications Suspect data (fish) PBDE and Mercury conditions will take time to achieve chemical recovery – measures delivered to address reason, awaiting recovery	Good by 2027 (ecological) Good by 2063 (chemical; natural conditions)
Adur GB540704116000 South East TraC	Transitional (HMWB – Flood Protection; Navigation, Ports and Harbours)	-	1.181 (surface area)	Moderate Ecological Potential, Fail Chemical Status (2019)	HMWB	Mitigation measures assessment – Moderate or less Biological quality elements (Angiosperms – saltmarsh – Moderate, Fish – Moderate) Physico-chemical quality elements (Dissolved Inorganic Nitrogen – Moderate) Mitigation Measures Assessment – Moderate or less) Priority hazardous substances (Mercury and its Compounds and Polybrominated diphenyl ethers (PBDE) – Fail	Physical modifications PBDE and Mercury conditions will take time to achieve chemical recovery	Good by 2027 (ecological; disproportionate costs to address moderate status; good status prevented by A/HMWB designated use) Good by 2063 (chemical; natural conditions)
Sussex GB640704540003 South East TraC	Coastal (HMWB – Coastal Protection)	-	189.925 (surface area)	Moderate Status (2016): Moderate Ecological Potential, Good Chemical Status	HMWB	Mitigation measures assessment – Moderate or less Mercury and Its Compounds – Fail	Physical modifications Measures delivered to address reason for chemical failures, awaiting recovery	Good by 2027 (ecological) Good by 2063 (chemical; natural conditions)

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Water body ID / management catchment	Water body type	Approximate length of principal water course (km)	Approximate catchment area (km^2)	Status	*HMWB[11] / AWB[12]	Supporting elements, less than Good Status / Potential	Issues preventing the attainment of Good Status	Objective
				Moderate Status (2019): Moderate Ecological Potential, Fail Chemical Status		Polybrominated diphenyl ethers (PBDE) – Fail		

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Table A-2 Status of scoped in WFD water bodies for consideration of offshore activities

Water body	Sussex	Arun
ID	GB640704540003	GB540704105000
Water body type	Coastal	Transitional
River basin district name	South East	South East
Water body surface area (km^2)	189.925	1.246
Overall current status	Moderate	Moderate
Current status (ecological)	Moderate	Moderate
Current status (chemical)	Fail	Fail
Target water body status and deadline	Good by 2027 (ecological); Good by 2063 (chemical; natural conditions)	Good by 2027 (ecological); Good by 2063 (chemical; natural conditions)
Hydromorphology status of water body	Not assessed	Supports Good
Is the water body heavily modified (HMWB)?	Yes	Yes
Reason for HMWB	Coastal protection	Flood protection
WFD phytoplankton classifications	Good	Not assessed
History or harmful algae	Not monitored	Not monitored

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Water body	Sussex	Arun
Distance from proposed development	0 km	0 km (from onshore cable route) and approximately 325 m (from offshore cable route)

Source: Environment Agency (2017), *Clearing the Waters For All - water body summary table,* [online] Available at: https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters [Accessed 06 June 2023].

Table A-3 Status of scoped in Bathing Waters[13]

Bathing water name	Littlehampton	Middleton-on-sea
ID	15500	15600
Type	Bathing Water	Bathing Water
Distance from Rampion 2 (m)[14]	555	1,088
Classification (2021)	Good	Excellent
Classification (2020)*	-	-
Classification (2019)	Good	Excellent
Classification (2018)	Good	Excellent
Classification (2017)	Good	Excellent
Classification (2016)	Good	Excellent

[13] Source: Environment Agency. Bathing Water Quality, [online] https://environment.data.gov.uk/bwq/profiles/ [Accessed 06 June 2023].

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* Note, Bathing Water classifications were not made for the 2020 season due to the impact of the COVID-19 pandemic on the sampling programme.

Table A-4 Natura 2000 sites within 2km of the offshore cable corridor

Designated Site	Relevant Features with potential for Likely Significant Effect	Potential for Likely Significant Effect		
		Construction phase	Operation and maintenance phase	Decommissioning phase
Solent and Dorset Coast Special Protection Area	Common tern	Direct disturbance and displacement	N/A	Direct disturbance and displacement
		In-combination effects		In-combination effects
	Sandwich tern	Direct disturbance and displacement	Direct disturbance and displacement	Direct disturbance and displacement
		In-combination effects	In-combination effects	In-combination effects
	Little tern	Direct disturbance and displacement	N/A	Direct disturbance and displacement
		In-combination effects		In-combination effects

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Table A-5 Higher sensitivity habitats assessment within the Sussex coastal water body

Characterisation	Habitat	Area in water body (hectares)	Within 500m?
Higher Sensitivity	Chalk reef	11,637.06	Yes - see Figure A-1
Higher Sensitivity	Mussel beds, including blue and horse mussel	450.63	Yes - see Figure A-1
Higher Sensitivity	Saltmarsh	1.12	No
Higher Sensitivity	Subtidal kelp beds	2,313.15	Yes - see Figure A-1

Table A-6 Lower sensitivity habitats assessment within the Sussex coastal water body

Characterisation	Habitat	Area in water body (hectares)	Area potentially affected (%)
Lower Sensitivity	Cobbles, gravel and shingle	1,207.59	1.10%
Lower Sensitivity	Intertidal soft sediment	745.94	1.79%
Lower Sensitivity	Rocky shore	924.69	1.44%
Lower Sensitivity	Subtidal rocky reef	10,896.08	0.12%
Lower Sensitivity	Subtidal soft sediments	4,502.06	0.30%

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Table A-7 Higher sensitivity habitats assessment within the Arun transitional water body

Characterisation	Habitat	Area in water body (hectares)	Within 500m?
Higher Sensitivity	Saltmarsh	10.33	Yes
Higher Sensitivity	Subtidal kelp beds	1.44	Yes

Table A-8 Lower sensitivity habitats assessment within the Arun transitional water body

Characterisation	Habitat	Area in Water Body (ha)	Area potentially affected (%)
Lower Sensitivity	Intertidal soft sediment	8.06	165%
Lower Sensitivity	Subtidal soft sediments	6.7	199%
Lower Sensitivity	Subtidal rocky reef	1.44	926%

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Annex B
Screening and Scoping Assessment

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Traffic light system key

Screening / Scoping Process - Traffic Light System Key

Activity Screening/ Scoping

Key Colour	**Level of Potential Risk**
GREEN	Project activities / infrastructure types that are considered unlikely to cause any risk to the delivery of Water Framework Directive (WFD) objectives are given a green traffic light (screened/ scoped out).
AMBER	Project activities / infrastructure types that carry a possible risk to the delivery of WFD objectives are given an amber traffic light (screened/ scoped in on precaution for further assessment in **Annex C** and **Section 5** of **Appendix 26.3**).
RED	Project activities / infrastructure types that are considered likely to carry a risk to the delivery of WFD objectives are given a red traffic light (screened/ scoped in for further assessment in **Annex C** and **Section 5** of **Appendix 26.3**)

Waterbody Screening

In or N/A - Out	The waterbodies are also screened in / out depending on whether there is a potential connection between proposed activities and the WFD water body receptors. *N/A - Out is stated where the activity isn't proposed in that catchment or where its in the catchment but not subject to the screening criteria.

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River waterbody assessment

Risk scoping for WFD objectives		Proposed Development Elements	Landfall works			
		Development Phase	Construction (and Decommissioning)		Operation and Maintenance	
		WFD Waterbody area	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody catchment	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	
		Development Element	Construction of trenchless crossing (likely Horizontal Directional Drilling (HDD)), Transition Joint Bay (TJB) and temporary	Construction of trenchless crossing (likely HDD) infrastructure, TJB and temporary landfall compound	Permanent TJB	
		Pathway to river water body?	Direct - overland flow and in flood	Indirect (overland flow/ infiltration)	Direct - overland flow and in flood	
	WFD Element *(Receptor)*	Source of impacts	Ground disturbance and mobilisation of sediments/ contaminants during construction of the landfall and associated earthworks including soil stockpiling. Storage/use of fuels, chemicals or bentonite on site. Construction of the trenchless crossing method to install cables under Climping beach, the TJB and temporary landfall compound sited in a field behind the beach.		Isolated cable repairs and use of fuels and chemicals at TJBs. Routine maintenance of landfall will be limited (every few years) via inspection point/ manhole	
Receivers: Ecological	Biology	Macrophytes and phytobenthos	SCREENED/SCOPED IN: Potential for pollutants and sediments from construction to reach watercourse, particularly in flood conditions. More assessment required.	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal	
		Benthic invertebrates	SCREENED/SCOPED IN: Potential for pollutants and sediments from construction to reach watercourse, particularly in flood conditions. More assessment required.	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal	
		Fish	SCREENED/SCOPED IN: Potential for pollutants and sediments from construction to reach watercourse, particularly in flood conditions. More assessment required.	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal	
		delivery of target status				

Risk scoping for WFD objectives			Landfall works		
	Proposed Development Elements		Construction (and Decommissioning)		Operation and Maintenance
	Development Phase		Construction (and Decommissioning)		Operation and Maintenance
	WFD Waterbody area		Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody catchment	Within Flood Zone 3 or <25m of any watercourse/ drainage channel
	Development Element		Construction of trenchless crossing (likely Horizontal Directional Drilling (HDD)), Transition Joint Bay (TJB) and temporary	Construction of trenchless crossing (likely HDD) infrastructure, TJB and temporary landfall compound	Permanent TJB
	Pathway to river water body?		Direct - overland flow and in flood	Indirect (overland flow/ infiltration)	Direct - overland flow and in flood
WFD elements for Rivers: Hydromorphology	Hydrological regime *Quantity and dynamics of flow* *Connection to groundwater bodies*	Predicted change to status of element/receptor and predicted impact on (green = unlikely, amber = possibly, red = likely)	SCREENED/SCOPED IN: Possible impacts (e.g. disruption of flow pathways) due to the size and depth of the trenches. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal
	River continuity		SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes
	Morphological conditions *River depth and width variation* *Structure and substrate of the river bed* *Structure of the riparian zone*		SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes
WFD elements for Rivers: Physio-chemical	General physio-chemical & Specific Pollutants		SCREENED/SCOPED IN: Potential for pollutants and sediments from construction to reach watercourse, particularly in flood conditions. More assessment required.	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal
WFD elements for Rivers: Chemical	Priority hazardous substances & Priority Substances		SCREENED/SCOPED IN: Potential for pollutants and sediments from construction to reach watercourse, particularly in flood conditions. More assessment required.	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal

Risk scoping for WFD objectives	Proposed Development Elements	Landfall works		
	Development Phase	Construction (and Decommissioning)		Operation and Maintenance
	WFD Waterbody area	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody catchment	Within Flood Zone 3 or <25m of any watercourse/ drainage channel
	Development Element	Construction of trenchless crossing (likely Horizontal Directional Drilling (HDD)), Transition Joint Bay (TJB) and temporary	Construction of trenchless crossing (likely HDD) infrastructure, TJB and temporary landfall compound	Permanent TJB
	Pathway to river water body?	Direct - overland flow and in flood	Indirect (overland flow/ infiltration)	Direct - overland flow and in flood
Waterbody Screening (Stated In where a SCREENED/SCOPED IN activity is within water body screening limits where applicable)*	Ryebank Rife	In	N/A - Out	N/A - Out
	Black Ditch (W Sussex)	N/A - Out	N/A - Out	N/A - Out
	Burpham Tributary (R Arun)	N/A - Out	N/A - Out	N/A - Out
	River Stor	N/A - Out	N/A - Out	N/A - Out
	Honeybridge Stream	N/A - Out	N/A - Out	N/A - Out
	Adur (Lockbridge)	N/A - Out	N/A - Out	N/A - Out
	Adur East (Sakeham)	N/A - Out	N/A - Out	N/A - Out
	Cowfold Stream	N/A - Out	N/A - Out	N/A - Out
	Bolney Sewer	N/A - Out	N/A - Out	N/A - Out
	Adur (East)	N/A - Out	N/A - Out	N/A - Out

Risk scoping for WFD objectives	Proposed Development Elements	Onshore cable circuits			
	Development Phase	Construction (and Decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody Catchment	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody Catchment
	Development Element	Onshore cable circuit trenching and joint bay (JB) construction	Cable route circuit trenching and JBs construction	Cable Route and JBs along route	Cable Route and JBs along route
	Pathway to river water body?	Indirect - overland flow and in flood	Indirect (overland flow/ infiltration)		
WFD Element *(Receptor)*	Source of impacts	Ground disturbance and mobilisation of sediments/ contaminants during construction of the landfall and associated earthworks including soil stockpiling. Storage/use of fuels, chemicals or bentonite on site. Assumed 1m deep target depth of trench, approx. 2 - 4m wide at surface and 0.9m wide at base. Includes JBs typically every 750 - 950m. JB will be 4m wide by 14m in length. Watercourse crossings considered separately - see adjacent		Isolated cable repairs and use of fuels and chemicals at TJBs and along the route. Maintenance/ testing of onshore cable very minimal, (every 2 - 5 years) to reach relevant section of the route with testing via manholes/ inspection chambers. Assumed maintenance only short term and yielding minimal disturbance	
Biology	Macrophytes and phytobenthos	SCREENED/SCOPED IN: Dewatering, ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions.	SCREENED/SCOPED OUT: Ground disturbance from excavations have no direct pathway for construction effects to reach watercourse	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.
Biology	Benthic invertebrates	SCREENED/SCOPED IN: Dewatering, ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions.	SCREENED/SCOPED OUT: Ground disturbance from excavations have no direct pathway for construction effects to reach watercourse	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.
Biology	Fish	SCREENED/SCOPED IN: Dewatering, ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions.	SCREENED/SCOPED OUT: Ground disturbance from excavations have no direct pathway for construction effects to reach watercourse	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.

delivery of target status

ers: Ecological

Risk scoping for WFD objectives		Proposed Development Elements	Onshore cable circuits			
		Development Phase	Construction (and Decommissioning)		Operation and Maintenance	
		WFD Waterbody area	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody Catchment	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody Catchment
		Development Element	Onshore cable circuit trenching and joint bay (JB) construction	Cable route circuit trenching and JBs construction	Cable Route and JBs along route	Cable Route and JBs along route
		Pathway to river water body?	Indirect - overland flow and in flood	Indirect (overland flow/ infiltration)		
WFD elements for Rivers: Hydromorphology		Hydrological regime *Quantity and dynamics of flow* *Connection to groundwater bodies*	SCREENED/SCOPED IN: Possible impacts (e.g. disruption of flow pathways) due to the size and depth of the trenches. Further assessment required	SCREENED/SCOPED OUT: . Possible source (e.g. disruption of flow pathways) due to the size and depth of the trenches. However no direct pathway to watercourses	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.
		River continuity	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes
		Morphological conditions *River depth and width variation* *Structure and substrate of the river bed* *Structure of the riparian zone*	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes
	Physio-chemical	General physio-chemical & Specific Pollutants	SCREENED/SCOPED IN: Ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions. Further assessment required	SCREENED/SCOPED OUT: Ground disturbance from excavations have no direct pathway for construction effects to reach watercourse	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.
WFD elements for Rivers: Chemical		Priority hazardous substances & Priority Substances	SCREENED/SCOPED IN: Ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions. Further assessment required	SCREENED/SCOPED OUT: Ground disturbance from excavations have no direct pathway for construction effects to reach watercourse	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.

Predicted change to status of element/receptor and predicted impact on (green = unlikely, amber = possibly, red = likely)

Risk scoping for WFD objectives	Proposed Development Elements	Onshore cable circuits			
	Development Phase	Construction (and Decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody Catchment	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody Catchment
	Development Element	Onshore cable circuit trenching and joint bay (JB) construction	Cable route circuit trenching and JBs construction	Cable Route and JBs along route	Cable Route and JBs along route
	Pathway to river water body?	Indirect - overland flow and in flood	Indirect (overland flow/ infiltration)		
Waterbody Screening (Stated In where a SCREENED/SCOPED IN activity is within water body screening limits where applicable)*	Ryebank Rife	In	N/A - Out	N/A - Out	N/A - Out
	Black Ditch (W Sussex)	In	N/A - Out	N/A - Out	N/A - Out
	Burpham Tributary (R Arun)	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	River Stor	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Honeybridge Stream	In	N/A - Out	N/A - Out	N/A - Out
	Adur (Lockbridge)	In	N/A - Out	N/A - Out	N/A - Out
	Adur East (Sakeham)	In	N/A - Out	N/A - Out	N/A - Out
	Cowfold Stream	In	N/A - Out	N/A - Out	N/A - Out
	Bolney Sewer	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Adur (East)	In	N/A - Out	N/A - Out	N/A - Out

Risk scoping for WFD objectives	Proposed Development Elements	Onshore cable corridor watercourse crossings			
	Development Phase	Construction (and Decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Crossings, both WFD blue line and tributary watercourse/drainage channels	Crossings, both WFD blue line and tributary watercourse/drainage channels	Crossings, both WFD blue line and tributary watercourse/drainage channels	Crossings, both WFD blue line and tributary watercourse/drainage channels
	Development Element	Onshore cable corridor watercourse crossings via trenchless methods (e.g. HDD), at Main Rivers and other sensitive locations	Onshore cable corridor watercourse crossings via trenched methods (e.g. open cut) at other watercourses	Onshore cable corridor crossings via trenchless methods (e.g. HDD), at Main Rivers and other sensitive locations	Onshore cable corridor watercourse crossings via trenched methods (e.g. open cut) at other watercourses
	Pathway to river water body?	Direct	Direct		
WFD Element *(Receptor)*	Source of impacts	Crossing works near watercourses and ground disturbance / mobilisation of sediments / contaminants at the excavations for trenchless crossing pits. Likely to be HDD bore under one location to another under crossing. Where practicable trenching pits will be sited outside floodplains. Appropriate management and treatment of dewatering arising prior to discharge.	Crossing works in watercourses and ground disturbance / mobilisation of sediments / contaminants from trenched excavations (open cut methods). Fluming using a pipe, or over pumping. Installation of duct in trench with an approx. depth of 1.45m - 2m beneath watercourse. Installation over several days before reinstatement to original condition,	Isolated cable repairs and use of fuels and chemicals. As per the onshore cable circuits, maintenance is assumed to be isolated and short term in nature yielding minimal disturbance	
Biology	Macrophytes and phytobenthos	SCREENED/SCOPED IN: Ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions. Further assessment required.	SCREENED/SCOPED IN: Will have direct temporary impacts on the watercourse and pollution/sediment impacts. Further assessment required	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.
Biology	Benthic invertebrates	SCREENED/SCOPED IN: Ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions. Further assessment required.	SCREENED/SCOPED IN: Will have direct temporary impacts on the watercourse and pollution/sediment impacts. Further assessment required	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.
Biology	Fish	SCREENED/SCOPED IN: Ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions. Further assessment required.	SCREENED/SCOPED IN: Will have direct temporary impacts on the watercourse and pollution/sediment impacts. Further assessment required	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.
Supporting elements: Ecological	delivery of target status				

Risk scoping for WFD objectives	Proposed Development Elements	Onshore cable corridor watercourse crossings			
	Development Phase	Construction (and Decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Crossings, both WFD blue line and tributary watercourse/drainage channels	Crossings, both WFD blue line and tributary watercourse/drainage channels	Crossings, both WFD blue line and tributary watercourse/drainage channels	Crossings, both WFD blue line and tributary watercourse/drainage channels
	Development Element	Onshore cable corridor watercourse crossings via trenchless methods (e.g. HDD), at Main Rivers and other sensitive locations	Onshore cable corridor watercourse crossings via trenched methods (e.g. open cut) at other watercourses	Onshore cable corridor crossings via trenchless methods (e.g. HDD), at Main Rivers and other sensitive locations	Onshore cable corridor watercourse crossings via trenched methods (e.g. open cut) at other watercourses
	Pathway to river water body?	Direct	Direct		
WFD elements for Rivers: Hydromorphology	Hydrological regime *Quantity and dynamics of flow* *Connection to groundwater bodies*	SCREENED/SCOPED IN: Possible impacts (e.g. disruption of flow pathways). Possible discharge of dewatered groundwater to the adjacent watercourse network. further assessment required	SCREENED/SCOPED IN: Will have direct temporary impacts on the watercourse and pollution/sediment impacts. Further assessment required	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.
	River continuity	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED IN: Will have direct temporary impacts on the watercourse and pollution/sediment impacts. Further assessment required	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes
	Morphological conditions *River depth and width variation* *Structure and substrate of the river bed* *Structure of the riparian zone*	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED IN: Will have direct temporary impacts on the watercourse and pollution/sediment impacts. Further assessment required	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes
Physio-chemical	General physio-chemical & Specific Pollutants	SCREENED/SCOPED IN: Ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions. Further assessment required	SCREENED/SCOPED IN: Will have direct temporary impacts on the watercourse and pollution/sediment impacts. Further assessment required	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.
WFD elements for Rivers: Chemical	Priority hazardous substances & Priority Substances	SCREENED/SCOPED IN: Ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions. Further assessment required	SCREENED/SCOPED IN: Will have direct temporary impacts on the watercourse and pollution/sediment impacts. Further assessment required	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse.

Predicted change to status of element/receptor and predicted impact on (green = unlikely, amber = possibly, red = likely)

Risk scoping for WFD objectives	Proposed Development Elements	Onshore cable corridor watercourse crossings			
	Development Phase	Construction (and Decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Crossings, both WFD blue line and tributary watercourse/drainage channels	Crossings, both WFD blue line and tributary watercourse/drainage channels	Crossings, both WFD blue line and tributary watercourse/drainage channels	Crossings, both WFD blue line and tributary watercourse/drainage channels
	Development Element	Onshore cable corridor watercourse crossings via trenchless methods (e.g. HDD), at Main Rivers and other sensitive locations	Onshore cable corridor watercourse crossings via trenched methods (e.g. open cut) at other watercourses	Onshore cable corridor crossings via trenchless methods (e.g. HDD), at Main Rivers and other sensitive locations	Onshore cable corridor watercourse crossings via trenched methods (e.g. open cut) at other watercourses
	Pathway to river water body?	Direct	Direct		
Waterbody Screening (Stated In where a SCREENED/SCOPED IN activity is within water body screening limits where applicable)*	Ryebank Rife	In	In	N/A - Out	N/A - Out
	Black Ditch (W Sussex)	In	In	N/A - Out	N/A - Out
	Burpham Tributary (R Arun)	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	River Stor	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Honeybridge Stream	In	In	N/A - Out	N/A - Out
	Adur (Lockbridge)	In	N/A - Out	N/A - Out	N/A - Out
	Adur East (Sakeham)	N/A - Out	In	N/A - Out	N/A - Out
	Cowfold Stream	In	In	N/A - Out	N/A - Out
	Bolney Sewer	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Adur (East)	N/A - Out	In	N/A - Out	N/A - Out

Risk scoping for WFD objectives	Proposed Development Elements	Temporary construction haul road			
	Development Phase	Construction (and Decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Within Flood Zone 3 or within <25m of any watercourse/ drainage channel	Wider WFD Catchment	Within Flood Zone 3 or within <25m of any watercourse/ drainage channel	Wider WFD Catchment
	Development Element	New temporary construction haul road and associated access points	New temporary construction haul road and associated access points	Not Applicable - temporary construction haul road to be removed at end of construction	Not Applicable - temporary construction haul road to be removed at end of construction
	Pathway to river water body?	Direct - overland flow and infiltration	In direct - overland flow/infiltration		
WFD Element *(Receptor)*	Source of impacts	Ground disturbance and mobilisation of sediments / contaminants from the development of the temporary construction haul road, including earthworks and soil stockpiling. Temporary roadway width 6m on average up to 10m (at its widest). Depth typically 0.2m. Likely to be a mix of stone aggregate tracks, and those that do not have any hard materials (e.g. trackway panelling, or bogmatting) depending on ground conditions. In fluvial floodplain where practicable trackway will be used as the preferred option. Worst case of all stone is assumed. Watercourse crossings assumed separately - see adjacent		N/A The temporary haul road will not exist during operation	N/A The temporary haul road will not exist during operation
Biology	Macrophytes and phytobenthos	SCREENED/SCOPED IN: Potential for pollutants and sediments from track construction to reach watercourse, particularly in flood conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.
Biology	Benthic invertebrates	SCREENED/SCOPED IN: Potential for pollutants and sediments from track construction to reach watercourse, particularly in flood conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.
Biology	Fish	SCREENED/SCOPED IN: Potential for pollutants and sediments from track construction to reach watercourse, particularly in flood conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.

Biology — Fish

delivery of target status

vers: Ecological

Risk scoping for WFD objectives			Temporary construction haul road			
	Proposed Development Elements		Construction (and Decommissioning)		Operation and Maintenance	
	Development Phase		Within Flood Zone 3 or within <25m of any watercourse/ drainage channel	Wider WFD Catchment	Within Flood Zone 3 or within <25m of any watercourse/ drainage channel	Wider WFD Catchment
	Development Element		New temporary construction haul road and associated access points	New temporary construction haul road and associated access points	Not Applicable - temporary construction haul road to be removed at end of construction	Not Applicable - temporary construction haul road to be removed at end of construction
	Pathway to river water body?		Direct - overland flow and infiltration	In direct - overland flow/infiltration		
WFD elements for Rivers: Hydromorphology	Hydrological regime *Quantity and dynamics of flow* *Connection to groundwater bodies*	Predicted change to status of element/receptor and predicted impact on (green = unlikely, amber = possibly, red = likely)	SCREENED/SCOPED IN: Potential for pollutants and sediments from track construction to reach watercourse, particularly in flood conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.
	River continuity		SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes
	Morphological conditions *River depth and width variation* *Structure and substrate of the river bed* *Structure of the riparian zone*		SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes
WFD elements for Rivers: Physio-chemical	General physio-chemical & Specific Pollutants		SCREENED/SCOPED IN: Potential for pollutants and sediments from track construction to reach watercourse, particularly in flood conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.
WFD elements for Rivers: Chemical	Priority hazardous substances & Priority Substances		SCREENED/SCOPED IN: Potential for pollutants and sediments from track construction to reach watercourse, particularly in flood conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.

Risk scoping for WFD objectives	Proposed Development Elements	Temporary construction haul road			
	Development Phase	Construction (and Decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Within Flood Zone 3 or within <25m of any watercourse/ drainage channel	Wider WFD Catchment	Within Flood Zone 3 or within <25m of any watercourse/ drainage channel	Wider WFD Catchment
	Development Element	New temporary construction haul road and associated access points	New temporary construction haul road and associated access points	Not Applicable - temporary construction haul road to be removed at end of construction	Not Applicable - temporary construction haul road to be removed at end of construction
	Pathway to river water body?	Direct - overland flow and infiltration	In direct - overland flow/infiltration		
Waterbody Screening (Stated In where a SCREENED/SCOPED IN activity is within water body screening limits where applicable)*	Ryebank Rife	In	N/A - Out	N/A - Out	N/A - Out
	Black Ditch (W Sussex)	In	N/A - Out	N/A - Out	N/A - Out
	Burpham Tributary (R Arun)	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	River Stor	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Honeybridge Stream	In	N/A - Out	N/A - Out	N/A - Out
	Adur (Lockbridge)	In	N/A - Out	N/A - Out	N/A - Out
	Adur East (Sakeham)	In	N/A - Out	N/A - Out	N/A - Out
	Cowfold Stream	In	N/A - Out	N/A - Out	N/A - Out
	Bolney Sewer	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Adur (East)	In	N/A - Out	N/A - Out	N/A - Out

Risk scoping for WFD objectives	Proposed Development Elements	Tempoary construction haul road watercourse crossings			
	Development Phase	Construction (and Decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Crossings, both WFD blue line and tributary watercourse/drainage channels	Crossings, both WFD blue line and tributary watercourse/drainage channels	Crossings, both WFD blue line and tributary watercourse/drainage channels	Crossings, both WFD blue line and tributary watercourse/drainage channels
	Development Element	Temporary construction haul road watercourse crossings - clear span bridges	Temporary construction haul road watercourse crossings - culverts	Not Applicable - temporary construction haul road crossing to be removed at end of construction	Not Applicable - temporary construction haul road crossing to be removed at end of construction
	Pathway to river water body?	Direct	Direct		
WFD Element *(Receptor)*	Source of impacts	Ground disturbance and mobilisation of sediments / contaminants during the construction of temporary construction haul road watercourse crossings. Clear span bridges will be utlised for larger more sensitive crossings. They will be removed following the completion of construction (potentially in place up to 3.5 years)	Ground disturbance and mobilisation of sediments / contaminants during the construction of temporary construction haul road watercourse crossings. Culverts to be used on smaller tributaries and drainage channels which have less flow/ less sensitive in nature. They will be removed following the completion of construction (potentially in place for up to 3.5 years)	N/A The temporary haul road crossing will not exist during operation	N/A The temporary haul road crossing will not exist during operation
Biology	Macrophytes and phytobenthos	SCREENED/SCOPED IN: Potential for pollutants and sediments from bridge construction to reach watercourse, particularly in flood conditions. Further assessment required	SCREENED/SCOPED IN: Assumed culverts. Will have direct impacts on the watercourse and pollution/sediment impacts. Direct impact on watercourse. Further assessment required	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossing will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossing will be removed after construction complete.
Biology	Benthic invertebrates	SCREENED/SCOPED IN: Potential for pollutants and sediments from bridge construction to reach watercourse, particularly in flood conditions. Further assessment required.	SCREENED/SCOPED IN: Assumed culverts. Will have direct impacts on the watercourse and pollution/sediment impacts. Direct impact on watercourse. Further assessment required	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossing will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossing will be removed after construction complete.
Biology	Fish	SCREENED/SCOPED IN: Potential for pollutants and sediments from bridge construction to reach watercourse, particularly in flood conditions. Further assessment required	SCREENED/SCOPED IN: Assumed culverts. Will have direct impacts on the watercourse and pollution/sediment impacts. Direct impact on watercourse. Further assessment required	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossing will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossing will be removed after construction complete.

Biology — delivery of target status — Waters: Ecological

Risk scoping for WFD objectives			Tempoary construction haul road watercourse crossings			
			Construction (and Decommissioning)		Operation and Maintenance	
	Proposed Development Elements		Crossings, both WFD blue line and tributary watercourse/drainage channels	Crossings, both WFD blue line and tributary watercourse/drainage channels	Crossings, both WFD blue line and tributary watercourse/drainage channels	Crossings, both WFD blue line and tributary watercourse/drainage channels
	Development Element		Temporary construction haul road watercourse crossings - clear span bridges	Temporary construction haul road watercourse crossings - culverts	Not Applicable - temporary construction haul road crossing to be removed at end of construction	Not Applicable - temporary construction haul road crossing to be removed at end of construction
	Pathway to river water body?		Direct	Direct		
WFD elements for Rivers: Hydromorphology		Hydrological regime *Quantity and dynamics of flow* *Connection to groundwater bodies*	SCREENED/SCOPED IN: Potential for pollutants and sediments from bridge construction to reach watercourse, particularly in flood conditions. Further assessment required	SCREENED/SCOPED IN: Assumed culverts. Will have direct impacts on the watercourse and pollution/sediment impacts. Direct impact on watercourse. Further assessment required	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossing will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossing will be removed after construction complete.
		River continuity	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED IN: Assumed culverts. Will have direct impacts on the watercourse and pollution/sediment impacts. Direct impact on watercourse. Further	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes
		Morphological conditions *River depth and width variation* *Structure and substrate of the river bed* *Structure of the riparian zone*	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED IN: Assumed culverts. Will have direct impacts on the watercourse and pollution/sediment impacts. Direct impact on watercourse. Further assessment required	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes
	Physio-chemical	General physio-chemical & Specific Pollutants	SCREENED/SCOPED IN: Potential for pollutants and sediments from bridge construction to reach watercourse, particularly in flood conditions. Further assessment required	SCREENED/SCOPED IN: Assumed culverts. Will have direct impacts on the watercourse and pollution/sediment impacts. Direct impact on watercourse. Further assessment required	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossing will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossing will be removed after construction complete.
WFD elements for Rivers: Chemical		Priority hazardous substances & Priority Substances	SCREENED/SCOPED IN: Potential for pollutants and sediments from bridge construction to reach watercourse, particularly in flood conditions. Further assessment required	SCREENED/SCOPED IN: Assumed culverts. Will have direct impacts on the watercourse and pollution/sediment impacts. Direct impact on watercourse. Further assessment required	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossing will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossing will be removed after construction complete.

Predicted change to status of element/receptor and predicted impact on (green = unlikely, amber = possibly, red = likely)

Risk scoping for WFD objectives	Proposed Development Elements	Tempoary construction haul road watercourse crossings			
	Development Phase	Construction (and Decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Crossings, both WFD blue line and tributary watercourse/drainage channels	Crossings, both WFD blue line and tributary watercourse/drainage channels	Crossings, both WFD blue line and tributary watercourse/drainage channels	Crossings, both WFD blue line and tributary watercourse/drainage channels
	Development Element	Temporary construction haul road watercourse crossings - clear span bridges	Temporary construction haul road watercourse crossings - culverts	Not Applicable - temporary construction haul road crossing to be removed at end of construction	Not Applicable - temporary construction haul road crossing to be removed at end of construction
	Pathway to river water body?	Direct	Direct		
Waterbody Screening (Stated In where a SCREENED/SCOPED IN activity is within water body screening limits where applicable)*	Ryebank Rife	In	In	N/A - Out	N/A - Out
	Black Ditch (W Sussex)	In	In	N/A - Out	N/A - Out
	Burpham Tributary (R Arun)	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	River Stor	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Honeybridge Stream	In	In	N/A - Out	N/A - Out
	Adur (Lockbridge)	N/A - Out	N/A Out	N/A - Out	N/A - Out
	Adur East (Sakeham)	In	In	N/A - Out	N/A - Out
	Cowfold Stream	In	In	N/A - Out	N/A - Out
	Bolney Sewer	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Adur (East)	N/A - Out	In	N/A - Out	N/A - Out

Risk scoping for WFD objectives	Proposed Development Elements	Temporary construction compounds (logistics & equipment along cable route)			
	Development Phase	Construction (and decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody catchment	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody catchment
	Development Element	Temporary construction compound and associated hardstanding	Temporary construction compound and associated hardstanding	Not Applicable - temporary construction compound to be removed at end of construction	Not Applicable - temporary construction compound to be removed at end of construction
	Pathway to river water body?	Direct (overland flow and in flood)	Indirect (infiltration)		
WFD Element *(Receptor)*	Source of impacts	Ground disturbance and mobilisation of sediments/ contaminants during the construction of temporary construction compounds. Also storage of fuels, and chemicals at the temporary construction compound site. Typically compounds will be between 2.5 - 6.1ha in area. Would take 3-4 months to establish and be in place for the duration of construction (up to 3.5 years)	N/A	N/A Infrastructure will not exist during operation	N/A Infrastructure will not exist during operation
Biology	Macrophytes and phytobenthos	SCREENED/SCOPED IN: Potential for pollutants to reach watercourse in flood conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.
	Benthic invertebrates	SCREENED/SCOPED IN: Potential for pollutants to reach watercourse in flood conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.
	Fish	SCREENED/SCOPED IN: Potential for pollutants to reach watercourse in flood conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.

delivery of target status

vers: Ecological

Risk scoping for WFD objectives		Proposed Development Elements	Temporary construction compounds (logistics & equipment along cable route)			
		Development Phase	Construction (and decommissioning)		Operation and Maintenance	
		WFD Waterbody area	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody catchment	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody catchment
		Development Element	Temporary construction compound and associated hardstanding	Temporary construction compound and associated hardstanding	Not Applicable - temporary construction compound to be removed at end of construction	Not Applicable - temporary construction compound to be removed at end of construction
		Pathway to river water body?	Direct (overland flow and in flood)	Indirect (infiltration)		
WFD elements for Rivers: Chemical	Hydromorphology	Hydrological regime *Quantity and dynamics of flow* *Connection to groundwater bodies*	SCREENED/SCOPED IN: Potential for pollutants to reach watercourse in flood conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.
		River continuity	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes
		Morphological conditions *River depth and width variation* *Structure and substrate of the river bed* *Structure of the riparian zone*	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes
	Physio-chemical	General physio-chemical & Specific Pollutants	SCREENED/SCOPED IN: Potential for pollutants to reach watercourse in flood conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.
WFD elements for Rivers: Chemical		Priority hazardous substances & Priority Substances	SCREENED/SCOPED IN: Potential for pollutants to reach watercourse in flood conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.

Predicted change to status of element/receptor and predicted impact on (green = unlikely, amber = possibly, red = likely)

Risk scoping for WFD objectives	Proposed Development Elements	Temporary construction compounds (logistics & equipment along cable route)			
	Development Phase	Construction (and decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody catchment	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody catchment
	Development Element	Temporary construction compound and associated hardstanding	Temporary construction compound and associated hardstanding	Not Applicable - temporary construction compound to be removed at end of construction	Not Applicable - temporary construction compound to be removed at end of construction
	Pathway to river water body?	Direct (overland flow and in flood)	Indirect (infiltration)		
Waterbody Screening (Stated In where a SCREENED/SCOPED IN activity is within water body screening limits where applicable)*	Ryebank Rife	In	N/A - Out	N/A - Out	N/A - Out
	Black Ditch (W Sussex)	In	N/A - Out	N/A - Out	N/A - Out
	Burpham Tributary (R Arun)	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	River Stor	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Honeybridge Stream	In	N/A - Out	N/A - Out	N/A - Out
	Adur (Lockbridge)	In	N/A - Out	N/A - Out	N/A - Out
	Adur East (Sakeham)	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Cowfold Stream	In	N/A - Out	N/A - Out	N/A - Out
	Bolney Sewer	N/A Out	N/A - Out	N/A - Out	N/A - Out
	Adur (East)	N/A Out	N/A - Out	N/A - Out	N/A - Out

Risk scoping for WFD objectives	Proposed Development Elements	New onshore substation (Bolney Road/ Kent Street)			
	Development Phase	Construction (and decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody catchment	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody catchment
	Development Element	Installation of a new onshore substation and all associated works including enabling works)		Maintenance of the new onshore substation	Maintenance of the new onshore substation
	Pathway to river water body?	Direct (overland flow)	Indirect (infiltration)	Direct (overland flow)	Indirect (infiltration)
WFD Element *(Receptor)*	Source of impacts	Ground disturbance and mobilisation of sediments/ contaminants during the construction of the new onshore substation. Also storage of fuels, and chemicals at the substation site. The footprint of the onshore substation will be approximately 6ha, A temporary works area will be 2.5ha in area. Works will include earthworks, vegetation clearance, access road construction, installation of drainage systems, installation of a temporary construction		Occasional use of fuels and chemicals. Maintenance of substation will be limited. Monitoring of the onshore substation will be done remotely using CCTV. Unscheduled maintenance would typically involve small number of vehicles to infrequently replace equipment, which is anticipated to be short term and yield minimal disturbance	
Biology	Macrophytes and phytobenthos	SCREENED/SCOPED IN: Dewatering, ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	Maintenance will be on existing access tracks and limited to machinery operation. Potential for spillage of oils/fuels. Infrequent requirement for this during operation	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.
Biology	Benthic invertebrates	SCREENED/SCOPED IN: Dewatering, ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	Maintenance will be on existing access tracks and limited to machinery operation. Potential for spillage of oils/fuels. Infrequent requirement for this during operation	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.
Biology	Fish	SCREENED/SCOPED IN: Dewatering, ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	Maintenance will be on existing access tracks and limited to machinery operation. Potential for spillage of oils/fuels. Infrequent requirement for this during operation	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.

Risk of delivery of target status

Drivers: Ecological

Risk scoping for WFD objectives			Proposed Development Elements	New onshore substation (Bolney Road/ Kent Street)			
			Development Phase	Construction (and decommissioning)		Operation and Maintenance	
			WFD Waterbody area	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody catchment	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody catchment
			Development Element	Installation of a new onshore substation and all associated works including enabling works)		Maintenance of the new onshore substation	Maintenance of the new onshore substation
			Pathway to river water body?	Direct (overland flow)	Indirect (infiltration)	Direct (overland flow)	Indirect (infiltration)
WFD elements for Ri	Hydromorphology	Hydrological regime *Quantity and dynamics of flow* *Connection to groundwater bodies*	Predicted change to status of element/receptor and predicted impact on (green = unlikely, amber = possibly, red = likely)	SCREENED/SCOPED IN: Dewatering, ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	Maintenance will be on existing access tracks and limited to machinery operation. Potential for spillage of oils/fuels. Infrequent requirement for this during operation	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.
		River continuity		SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes
		Morphological conditions *River depth and width variation* *Structure and substrate of the river bed* *Structure of the riparian zone*		SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes	SCREENED/SCOPED OUT: No in channel changes
	Physio-chemical	General physio-chemical & Specific Pollutants		SCREENED/SCOPED IN: Dewatering, ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance will be on existing access tracks and limited to machinery operation. Potential for spillage of oils/fuels. Infrequent requirement for this during operation	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.
WFD elements for Rivers: Chemical		Priority hazardous substances & Priority Substances		SCREENED/SCOPED IN: Dewatering, ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.	SCREENED/SCOPED OUT: Maintenance will be on existing access tracks and limited to machinery operation. Potential for spillage of oils/fuels. Infrequent requirement for this during operation	SCREENED/SCOPED OUT: No direct pathway for construction effects to reach watercourse.

Risk scoping for WFD objectives	Proposed Development Elements	New onshore substation (Bolney Road/ Kent Street)			
	Development Phase	Construction (and decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody catchment	Within Flood Zone 3 or <25m of any watercourse/ drainage channel	Wider Waterbody catchment
	Development Element	Installation of a new onshore substation and all associated works including enabling works)		Maintenance of the new onshore substation	Maintenance of the new onshore substation
	Pathway to river water body?	Direct (overland flow)	Indirect (infiltration)	Direct (overland flow)	Indirect (infiltration)
Waterbody Screening (Stated In where a SCREENED/SCOPED IN activity is within water body screening limits where applicable)*	Ryebank Rife	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Black Ditch (W Sussex)	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Burpham Tributary (R Arun)	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	River Stor	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Honeybridge Stream	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Adur (Lockbridge)	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Adur East (Sakeham)	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Cowfold Stream	In	N/A - Out	N/A - Out	N/A - Out
	Bolney Sewer	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Adur (East)	In	N/A - Out	N/A - Out	N/A - Out

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TRaC and coastal

Risk scoping for WFD objectives	Scheme Elements	Landfall works		
	Scheme Phase	Construction (and Decommissioning)		Operation and Maintenance
	WFD Waterbody area	Within Transitional & Coastal (TraC), within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Wider Waterbody catchment	Within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment
	Scheme Element	Construction of trenchless crossing (likely Horizontal Directional Drilling (HDD)), Transition Joint Bay (TJB) and temporary landfall compound	Trenchless crossing (likely HDD) infrastructure	TJB
	***Pathway* to TraC /Coastal water body?**	Direct - overland flow and in flood	Indirect (overland flow/ infiltration)	
	WFD Element *(Receptor)*	**Source of impacts**	Ground disturbance and mobilisation of sediments/ contaminants during construction of the landfall and associated earthworks including soil stockpiling.	Isolated cable repairs and use of fuels and chemicals at TJBs. Routine maintenance of landfall will be limited (every few years) via inspection point/ manhole
WFD elements for Transitional: Ecological **Biology**	**Invertebrates**	**delivery of target status**	SCREENED/SCOPED IN: Potential for pollutants and sediments from landfall construction to reach TraC waterbody, particularly in flood conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to TrAC	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse or TraC waterbody.
	Macroalgae		SCREENED/SCOPED IN: Potential for pollutants and sediments from landfall construction to reach TraC waterbody, particularly in flood conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to TrAC	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse or TraC waterbody.
	Phytoplankton		SCREENED/SCOPED IN: Potential for pollutants and sediments from landfall construction to reach TraC waterbody, particularly in flood conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to TrAC	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse or TraC waterbody.

Risk scoping for WFD objectives		Scheme Elements	Landfall works		
		Scheme Phase	Construction (and Decommissioning)		Operation and Maintenance
		WFD Waterbody area	Within Transitional & Coastal (TraC), within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Wider Waterbody catchment	Within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment
		Scheme Element	Construction of trenchless crossing (likely Horizontal Directional Drilling (HDD)), Transition Joint Bay (TJB) and temporary landfall compound	Trenchless crossing (likely HDD) infrastructure	TJB
		Pathway to TraC /Coastal water body?	Direct - overland flow and in flood	Indirect (overland flow/ infiltration)	
H Morph	Morphological conditions	Predicted change to status of element/receptor and predicted impact on d (green = unlikely, amber = possibly, red = likely)	SCREENED/SCOPED OUT - No in TraC waterbody channel changes	SCREENED/SCOPED OUT - No in TraC waterbody channel changes	SCREENED/SCOPED OUT - No in TraC waterbody channel changes
Physio-chemical	Dissolved Inorganic Nitrogen		SCREENED/SCOPED IN: Potential for pollutants and sediments from landfall construction to reach TraC waterbody, particularly in flood conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to TrAC	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse or TraC waterbody.
	Dissolved oxygen		SCREENED/SCOPED IN: Potential for pollutants and sediments from landfall construction to reach TraC waterbody, particularly in flood conditions. Further assessment required	SCREENED/SCOPED OUT: No direct pathway for construction effects to TrAC	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse or TraC waterbody.
Specific pollutants					
WFD elements for Transitional: Chemical	Priority hazardous substances & Priority Substances		SCREENED/SCOPED IN: Potential for pollutants and sediments from landfall construction to reach TraC waterbody, particularly in flood conditions. More assessment required.	SCREENED/SCOPED OUT: No direct pathway for construction effects to TrAC	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach watercourse or TraC waterbody.
	Other Pollutants				

Waterbody Screening (Stated In where a SCREENED/ SCOPED IN activity is within water body screening				
	Sussex Coastal	In	N/A - Out	N/A - Out
	Arun TrAC (including IDB unnamed IDB ditches in catchment)	In	N/A - Out	N/A - Out
	Adur TrAC (including unnamed channels in TrAC catchment)	N/A - Out	N/A - Out	N/A - Out

Risk scoping for WFD objectives	Scheme Elements	Onshore cable circuits			
	Scheme Phase	Construction (and Decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Wider Waterbody catchment	Within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Wider Waterbody Catchment
	Scheme Element	Onshore cable circuit trenching and JB construction	Onshore cable circuit trenching and JB construction	Onshore cable circuit and JBs	Onshore cable circuit and JBs
	Pathway to TraC /Coastal water body?	Indirect - overland flow and in flood	Indirect (overland flow/ infiltration)		
	WFD Element *(Receptor)*	**Source of impacts**	Ground disturbance and mobilisation of sediments/ contaminants during construction of the landfall and associated earthworks including soil stockpiling. Storage/use of fuels, chemicals or bentonite on site. Assumed 1m deep target depth of trench, approx. 2 - 4m wide at surface and 0.9m wide at base. Includes joint bays typically every 750 - 950m. JB will be 4m wide by 14m in length. Watercourse crossings considered separately - see adjacent		Isolated cable repairs and use of fuels and chemicals at TJBs and along the route. Maintenance/ testing of onshore cable very minimal, (every 2 - 5 years) to reach relevant section of the route with testing via manholes/ inspection chambers. Assumed maintenance only short term and yielding minimal disturbance
WFD elements for Transitional: Ecological Biology	Invertebrates	delivery of target status	SCREENED/SCOPED IN: Ground disturbance from excavations have potential to result in pollutants reaching TrAC, particularly during high rainfall conditions. Further assessment Required	SCREENED/SCOPED OUT - no effects on TrAC WFD waterbody	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC
	Macroalgae		SCREENED/SCOPED IN: Ground disturbance from excavations have potential to result in pollutants reaching TrAC, particularly during high rainfall conditions. Further assessment Required	SCREENED/SCOPED OUT - no effects on TrAC WFD waterbody	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC
	Phytoplankton		SCREENED/SCOPED IN: Ground disturbance from excavations have potential to result in pollutants reaching TrAC, particularly during high rainfall conditions. Further assessment Required	SCREENED/SCOPED OUT - no effects on TrAC WFD waterbody	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC

Risk scoping for WFD objectives		Scheme Elements	Onshore cable circuits			
		Scheme Phase	Construction (and Decommissioning)		Operation and Maintenance	
		WFD Waterbody area	Within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Wider Waterbody catchment	Within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Wider Waterbody Catchment
		Scheme Element	Onshore cable circuit trenching and JB construction	Onshore cable circuit trenching and JB construction	Onshore cable circuit and JBs	Onshore cable circuit and JBs
		Pathway to TraC /Coastal water body?	Indirect - overland flow and in flood	Indirect (overland flow/ infiltration)		
H Morph	Morphological conditions	Predicted change to status of element/receptor and predicted impact on d (green = unlikely, amber = possibly, red = likely)	SCREENED/SCOPED OUT - No in TraC waterbody channel changes	SCREENED/SCOPED OUT - No in TraC waterbody channel changes	SCREENED/SCOPED OUT - No in TraC waterbody channel changes	SCREENED/SCOPED OUT - No in TraC waterbody channel changes
Physio-chemical	Dissolved Inorganic Nitrogen		SCREENED/SCOPED IN: Ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions. Further assessment Required	SCREENED/SCOPED OUT - no effects on TrAC WFD waterbody	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC
	Dissolved oxygen		SCREENED/SCOPED IN: Ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions. Further assessment Required	SCREENED/SCOPED OUT - no effects on TrAC WFD waterbody	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC
Specific pollutants						
WFD elements for Transitional: Chemical	Priority hazardous substances & Priority Substances		SCREENED/SCOPED IN: Ground disturbance from excavations have potential to result in pollutants reaching watercourses, particularly during high rainfall conditions. Further assessment Required	SCREENED/SCOPED OUT - no effects on TrAC WFD waterbody	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC
	Other Pollutants					
Waterbody Screening (Stated In where a SCREENED/ SCOPED IN activity is within water body screening	Sussex Coastal		N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Arun TrAC (including IDB unnamed IDB ditches in catchment)		In	N/A - Out	N/A - Out	N/A - Out
	Adur TrAC (including unnamed channels in TrAC catchment)		N/A - Out	N/A - Out	N/A - Out	N/A - Out

Risk scoping for WFD objectives	Scheme Elements	Onshore cable corridor watercourse crossings			
	Scheme Phase	Construction (and Decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Crossings, both TraC and tributary watercourse/drainage channels within TrAC catchment	Crossings, both TraC and TrAC tributary watercourse/drainage channels within TrAC catchment	Crossings, both TraC and TrAC tributary watercourse/drainage channels within TrAC catchment	Crossings, both TraC and TrAC tributary watercourse/drainage channels within TrAC catchment
	Scheme Element	Onshore cable corridor watercourse crossings via trenchless methods (e.g. HDD), of TrAC Waterbody	Onshore cable corridor watercourse crossings via trenched methods (e.g. open cut) at Other watercourses	Onshore cable corridor watercourse crossings via trenchless methods (e.g. HDD), at Main Rivers and other sensitive locations	Onshore cable corridor watercourse crossings via trenched methods (e.g. open cut) at Other watercourses
	Pathway to TraC /Coastal water body?	Direct	Direct		
WFD Element *(Receptor)*	Source of impacts	Crossing works near watercourses and ground disturbance/ mobilisation of sediments/ contaminants at the excavations for trenchless crossing pits. Likely to be HDD bore under one location to another under crossing. Where practicable trenching pits will be sited outside	Crossing works in watercourses and ground disturbance/ mobilisation of sediments/ contaminants from trenched excavations (open cut methods). Fluming using a pipe, or over pumping. Installation of duct in trench with an approx. depth of 1.45m - 2m beneath watercourse.	Isolated cable repairs and use of fuels and chemicals. As per the onshore cable circuits, maintenance is assumed to be isolated and short term in nature yielding minimal disturbance	
WFD elements for Transitional: Ecological Biology	Invertebrates	SCREENED/SCOPED IN: Ground disturbance and dewatering from excavations have potential to result in pollutants reaching TrAC waterbodies particularly during high rainfall conditions. Further assessment required.	SCREENED/SCOPED IN: Ground disturbance from open cut crossings of unnamed ditches/ channels have potential to result in pollutants reaching downstream TrAC waterbodies, particularly during high rainfall conditions. Further assessment required.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC
	Macroalgae	SCREENED/SCOPED IN: Ground disturbance and dewatering from excavations have potential to result in pollutants reaching TrAC waterbodies particularly during high rainfall conditions. Further assessment required.	SCREENED/SCOPED IN: Ground disturbance from open cut crossings of unnamed ditches/ channels have potential to result in pollutants reaching downstream TrAC waterbodies, particularly during high rainfall conditions. Further assessment required.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC
	Phytoplankton	SCREENED/SCOPED IN: Ground disturbance and dewatering from excavations have potential to result in pollutants reaching TrAC waterbodies particularly during high rainfall conditions. Further assessment required.	SCREENED/SCOPED IN: Ground disturbance from open cut crossings of unnamed ditches/ channels have potential to result in pollutants reaching downstream TrAC waterbodies, particularly during high rainfall conditions. Further assessment required.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC

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Risk scoping for WFD objectives		Scheme Elements	Onshore cable corridor watercourse crossings			
		Scheme Phase	Construction (and Decommissioning)		Operation and Maintenance	
		WFD Waterbody area	Crossings, both TraC and tributary watercourse/drainage channels within TrAC catchment	Crossings, both TraC and TrAC tributary watercourse/drainage channels within TrAC catchment	Crossings, both TraC and TrAC tributary watercourse/drainage channels within TrAC catchment	Crossings, both TraC and TrAC tributary watercourse/drainage channels within TrAC catchment
		Scheme Element	Onshore cable corridor watercourse crossings via trenchless methods (e.g. HDD), of TrAC Waterbody	Onshore cable corridor watercourse crossings via trenched methods (e.g. open cut) at Other watercourses	Onshore cable corridor watercourse crossings via trenchless methods (e.g. HDD), at Main Rivers and other sensitive locations	Onshore cable corridor watercourse crossings via trenched methods (e.g. open cut) at Other watercourses
		Pathway to TraC /Coastal water body?	Direct	Direct		
H Morph	Morphological conditions	Predicted change to status of element/receptor and predicted impact on d (green = unlikely, amber = possibly, red = likely)	SCREENED/SCOPED OUT - No in TraC waterbody channel changes	SCREENED/SCOPED IN: Ground disturbance from open cut crossings of unnamed ditches/ channels have potential to result in pollutants reaching downstream TrAC waterbodies, particularly during high rainfall conditions. Further assessment required.	SCREENED/SCOPED OUT - No in TraC waterbody channel changes	SCREENED/SCOPED OUT - No in TraC waterbody channel changes
Physio-chemical	Dissolved Inorganic Nitrogen		SCREENED/SCOPED IN: Ground disturbance and dewatering from excavations have potential to result in pollutants reaching TrAC waterbodies particularly during high rainfall conditions. Further assessment required.	SCREENED/SCOPED IN: Ground disturbance from open cut crossings of unnamed ditches/ channels have potential to result in pollutants reaching downstream TrAC waterbodies, particularly during high rainfall conditions. Further assessment required.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC
	Dissolved oxygen		SCREENED/SCOPED IN: Ground disturbance and dewatering from excavations have potential to result in pollutants reaching TrAC waterbodies particularly during high rainfall conditions. Further assessment required.	SCREENED/SCOPED IN: Ground disturbance from open cut crossings of unnamed ditches/ channels have potential to result in pollutants reaching downstream TrAC waterbodies, particularly during high rainfall conditions. Further assessment required.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC
Specific pollutants						
WFD elements for Transitional: Chemical	Priority hazardous substances & Priority Substances		SCREENED/SCOPED IN: Ground disturbance and dewatering from excavations have potential to result in pollutants reaching TrAC waterbodies particularly during high rainfall conditions. Further assessment required.	SCREENED/SCOPED IN: Ground disturbance from open cut crossings of unnamed ditches/ channels have potential to result in pollutants reaching downstream TrAC waterbodies, particularly during high rainfall conditions. Further assessment required.	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC	SCREENED/SCOPED OUT: Maintenance anticipated to be minimal therefore limited opportunity for effects to reach TrAC
	Other Pollutants					
Waterbody Screening (Stated In where a SCREENED/ SCOPED IN activity is within water body screening	Sussex Coastal		N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Arun TrAC (including IDB unnamed IDB ditches in catchment)		In	In	N/A - Out	N/A - Out
	Adur TrAC (including unnamed channels in TrAC catchment)		N/A - Out	In	N/A - Out	N/A - Out

Risk scoping for WFD objectives	Scheme Elements	Temporary construction haul road			
	Scheme Phase	Construction (and Decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Wider WFD Catchment	Within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Wider WFD Catchment
	Scheme Element	Tempoary construction haul road and associated access points	Temporary construction haul road and associated access points	Not Applicable - temporary construction haul road to be removed at end of construction	Not Applicable - temporary haul road to be removed at end of construction
	Pathway to TraC /Coastal water body?	Direct - overland flow and infiltration	In direct - overland flow/infiltration		
	WFD Element *(Receptor)*	Source of impacts			
		Ground disturbance and mobilisation of sediments/ contaminants from the development of the temporary construction haul road, including earthworks and soil stockpiling. Temporary roadway width 6m up to 10m (at its widest point). Depth typically 0.2m. Likely to be a mix of stone aggregate tracks, and those that do not have any hard materials (e.g. trackway panelling, or bogmatting) depending on ground conditions. In fluvial floodplain where practicable trackway will be used as the preferred option. Worst case of all stone is assumed. Watercourse crossings assumed separately - see adjacent		The temporary haul road will not exist during operation	The temporary haul road will not exist during operation
WFD elements for Transitional: Ecological Biology	Invertebrates	SCREENED/SCOPED IN: Potential for pollutants and sediments from haul road construction to reach TraC, particularly in flood conditions. Further assessment required	SCREENED/SCOPED OUT - no effects on TrAC WFD waterbody	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.
	Macroalgae	SCREENED/SCOPED IN: Potential for pollutants and sediments from haul road construction to reach TraC, particularly in flood conditions. Further assessment required	SCREENED/SCOPED OUT - no effects on TrAC WFD waterbody	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.
	Phytoplankton	SCREENED/SCOPED IN: Potential for pollutants and sediments from haul road construction to reach TraC, particularly in flood conditions. Further assessment required	SCREENED/SCOPED OUT - no effects on TrAC WFD waterbody	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.

delivery of target status

Risk scoping for WFD objectives		Scheme Elements	Temporary construction haul road			
		Scheme Phase	Construction (and Decommissioning)		Operation and Maintenance	
		WFD Waterbody area	Within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Wider WFD Catchment	Within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Wider WFD Catchment
		Scheme Element	Tempoary construction haul road and associated access points	Temporary construction haul road and associated access points	Not Applicable - temporary construction haul road to be removed at end of construction	Not Applicable - temporary haul road to be removed at end of construction
		Pathway to TraC /Coastal water body?	Direct - overland flow and infiltration	In direct - overland flow/infiltration		
H Morph	Morphological conditions	Predicted change to status of element/receptor and predicted impact on d (green = unlikely, amber = possibly, red = likely)	SCREENED/SCOPED OUT - No in TraC waterbody channel changes	SCREENED/SCOPED OUT - No in TraC waterbody channel changes	SCREENED/SCOPED OUT - No in TraC waterbody channel changes	SCREENED/SCOPED OUT - No in TraC waterbody channel changes
Physio-chemical	Dissolved Inorganic Nitrogen		SCREENED/SCOPED IN: Potential for pollutants and sediments from haul road construction to reach TraC, particularly in flood conditions. Further assessment required	SCREENED/SCOPED OUT - no effects on TrAC WFD waterbody	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.
	Dissolved oxygen		SCREENED/SCOPED IN: Potential for pollutants and sediments from haul road construction to reach TraC, particularly in flood conditions. Further assessment required	SCREENED/SCOPED OUT - no effects on TrAC WFD waterbody	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.
Specific pollutants						
WFD elements for Transitional: Chemical	Priority hazardous substances & Priority Substances		SCREENED/SCOPED IN: Potential for pollutants and sediments from haul road construction to reach TraC, particularly in flood conditions. Further assessment required	SCREENED/SCOPED OUT - no effects on TrAC WFD waterbody	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road will be removed after construction complete.
	Other Pollutants					

Waterbody Screening (Stated In where a SCREENED/ SCOPED IN activity is within water body screening	Sussex Coastal	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Arun TrAC (including IDB unnamed IDB ditches in catchment)	In	N/A - Out	N/A - Out	N/A - Out
	Adur TrAC (including unnamed channels in TrAC catchment)	In	N/A - Out	N/A - Out	N/A - Out

Risk scoping for WFD objectives	Scheme Elements	Tempoary construction haul road watercourse crossings			
	Scheme Phase	Construction (and Decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Crossings within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Crossings within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Crossings within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Crossings within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment
	Scheme Element	Temporary construction haul road watercourse crossings - clear span bridges	Temporary construction haul road watercourse crossings - culverts	Not Applicable - temporary construction haul road crossing to be removed at end of construction	Not Applicable - temporary construction haul road crossing to be removed at end of construction
	Pathway to TraC /Coastal water body?	Direct	Direct		
	WFD Element *(Receptor)*	Source of impacts	Ground disturbance and mobilisation of sediments/ contaminants during the construction of temporary construction haul road watercourse crossings. Clear span bridges will be utlised for larger more sensitive crossings. They will be removed following the completion of construction (potentially in place up to 3.5 years)	Ground disturbance and mobilisation of sediments/ contaminants during the construction of temporary construction haul road watercourse crossings. Culverts to be used on smaller tributaries and drainage channels which have less flow/ less sensitive in nature. They will be removed following the completion of construction (potentially in place for up to 3.5 years)	Ground disturbance and mobilisation of sediments/ contaminants during the construction of temporary construction haul road watercourse crossings. The temporary haul road crossing will not exist during operation	The temporary haul road crossing will not exist during operation
WFD elements for Transitional: Ecological Biology	Invertebrates	delivery of target status	SCREENED/SCOPED IN: Potential for pollutants and sediments from bridge construction to reach TraC, particularly in flood conditions. Further assessment required	SCREENED/SCOPED IN: Culverts will have direct impacts on the watercourse and pollution/sediment impacts that may travel to downstream TraC waterbody. Further assessment required	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossings will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossings will be removed after construction complete.
	Macroalgae		SCREENED/SCOPED IN: Potential for pollutants and sediments from bridge construction to reach TraC, particularly in flood conditions. Further assessment required	SCREENED/SCOPED IN: Culverts will have direct impacts on the watercourse and pollution/sediment impacts that may travel to downstream TraC waterbody. Further assessment required	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossings will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossings will be removed after construction complete.
	Phytoplankton		SCREENED/SCOPED IN: Potential for pollutants and sediments from bridge construction to reach TraC, particularly in flood conditions. Further assessment required	SCREENED/SCOPED IN: Culverts will have direct impacts on the watercourse and pollution/sediment impacts that may travel to downstream TraC waterbody. Further assessment required	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossings will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossings will be removed after construction complete.

Risk scoping for WFD objectives		Scheme Elements	Tempoary construction haul road watercourse crossings			
		Scheme Phase	Construction (and Decommissioning)		Operation and Maintenance	
		WFD Waterbody area	Crossings within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Crossings within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Crossings within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Crossings within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment
		Scheme Element	Temporary construction haul road watercourse crossings - clear span bridges	Temporary construction haul road watercourse crossings - culverts	Not Applicable - temporary construction haul road crossing to be removed at end of construction	Not Applicable - temporary construction haul road crossing to be removed at end of construction
		Pathway to TraC /Coastal water body?	Direct	Direct		
H Morph	Morphological conditions	Predicted change to status of element/receptor and predicted impact on d (green = unlikely, amber = possibly, red = likely)	SCREENED/SCOPED OUT - No in TraC waterbody channel changes	SCREENED/SCOPED IN: Culverts will have direct impacts on the watercourse and pollution/sediment impacts that may travel to downstream TraC waterbody. Further assessment required	SCREENED/SCOPED OUT - No in TraC waterbody channel changes	SCREENED/SCOPED OUT - No in TraC waterbody channel changes
Physio-chemical	Dissolved Inorganic Nitrogen		SCREENED/SCOPED IN: Potential for pollutants and sediments from bridge construction to reach TraC, particularly in flood conditions. Further assessment required	Culverts will have direct impacts on the watercourse and pollution/sediment impacts that may travel to downstream TraC waterbody. Further assessment required	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossings will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossings will be removed after construction complete.
	Dissolved oxygen		SCREENED/SCOPED IN: Potential for pollutants and sediments from bridge construction to reach TraC, particularly in flood conditions. Further assessment required	Culverts will have direct impacts on the watercourse and pollution/sediment impacts that may travel to downstream TraC waterbody. Further assessment required	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossings will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossings will be removed after construction complete.
Specific pollutants						
WFD elements for Transitional: Chemical	Priority hazardous substances & Priority Substances		SCREENED/SCOPED IN: Potential for pollutants and sediments from bridge construction to reach TraC, particularly in flood conditions. More assessment required.	Culverts will have direct impacts on the watercourse and pollution/sediment impacts that may travel to downstream TraC waterbody. Further assessment required	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossings will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary haul road crossings will be removed after construction complete.
	Other Pollutants					
Waterbody Screening (Stated In where a SCREENED/ SCOPED IN activity is within water body screening	Sussex Coastal		N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Arun TrAC (including IDB unnamed IDB ditches in catchment)		In	In	N/A - Out	N/A - Out
	Adur TrAC (including unnamed channels in TrAC catchment)		In	In	N/A - Out	N/A - Out

Risk scoping for WFD objectives	Scheme Elements	Temporary construction compounds (logistics & equipment along cable route)			
	Scheme Phase	Construction (and decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Wider Waterbody catchment	Within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Wider Waterbody catchment
	Scheme Element	Temporary construction compound and associated hardstanding	Temporary construction compound and associated hardstanding	Not Applicable - temporary construction compound to be removed at end of construction	Not Applicable - temporary construction compound to be removed at end of construction
	Pathway to TraC /Coastal water body?	Direct (overland flow and in flood)	Indirect (infiltration)		
WFD Element *(Receptor)*	Source of impacts	Ground disturbance and mobilisation of sediments/ contaminants during the construction of temporary construction compounds. Also storage of fuels, and chemicals at the temporary construction compound site. Typically 4ha in area. Would take 3-4 months to establish and be in place for the duration of construction (up to 3.5 years)			
WFD elements for Transitional: Ecological Biology	Invertebrates	SCREENED/SCOPED OUT: no infrastructure located within 25m of a TrAC waterbody or assoicated tributary/channel. No direct pathway for pollutants and sediments from construction of compound to reach TraC waterbodies.	SCREENED/SCOPED OUT: No direct pathway for construction effects to TrAC	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.
	Macroalgae	SCREENED/SCOPED OUT: no infrastructure located within 25m of a TrAC waterbody or assoicated tributary/channel. No direct pathway for pollutants and sediments from construction of compound to reach TraC waterbodies.	SCREENED/SCOPED OUT: No direct pathway for construction effects to TrAC	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.
	Phytoplankton	SCREENED/SCOPED OUT: no infrastructure located within 25m of a TrAC waterbody or assoicated tributary/channel. No direct pathway for pollutants and sediments from construction of compound to reach TraC waterbodies.	SCREENED/SCOPED OUT: No direct pathway for construction effects to TrAC	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.

delivery of target status

Risk scoping for WFD objectives		Scheme Elements	Temporary construction compounds (logistics & equipment along cable route)			
		Scheme Phase	Construction (and decommissioning)		Operation and Maintenance	
		WFD Waterbody area	Within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Wider Waterbody catchment	Within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Wider Waterbody catchment
		Scheme Element	Temporary construction compound and associated hardstanding	Temporary construction compound and associated hardstanding	Not Applicable - temporary construction compound to be removed at end of construction	Not Applicable - temporary construction compound to be removed at end of construction
		Pathway to TraC /Coastal water body?	Direct (overland flow and in flood)	Indirect (infiltration)		
H Morph	Morphological conditions	Predicted change to status of element/receptor and predicted impact on d (green = unlikely, amber = possibly, red = likely)	SCREENED/SCOPED OUT - No in TraC waterbody channel changes	SCREENED/SCOPED OUT - No in TraC waterbody channel changes	SCREENED/SCOPED OUT - No in TraC waterbody channel changes	SCREENED/SCOPED OUT - No in TraC waterbody channel changes
Physio-chemical	Dissolved Inorganic Nitrogen		SCREENED/SCOPED OUT: no infrastructure located within 25m of a TrAC waterbody or assoicated tributary/channel. No direct pathway for pollutants and sediments from construction of compound to reach TraC waterbodies.	SCREENED/SCOPED OUT: No direct pathway for construction effects to TrAC	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.
	Dissolved oxygen		SCREENED/SCOPED OUT: no infrastructure located within 25m of a TrAC waterbody or assoicated tributary/channel. No direct pathway for pollutants and sediments from construction of compound to reach TraC waterbodies.	SCREENED/SCOPED OUT: No direct pathway for construction effects to TrAC	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.
Specific pollutants						
WFD elements for Transitional: Chemical	Priority hazardous substances & Priority Substances		SCREENED/SCOPED OUT: no infrastructure located within 25m of a TrAC waterbody or assoicated tributary/channel. No direct pathway for pollutants and sediments from construction of compound to reach TraC waterbodies.	SCREENED/SCOPED OUT: No direct pathway for construction effects to TrAC	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.	SCREENED/SCOPED OUT: No effects identified as result of scheme element as temporary construction compound will be removed after construction complete.
	Other Pollutants					
Waterbody Screening (Stated In where a SCREENED/ SCOPED IN activity is within water body screening	Sussex Coastal		N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Arun TrAC (including IDB unnamed IDB ditches in catchment)		N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Adur TrAC (including unnamed channels in TrAC catchment)		N/A - Out	N/A - Out	N/A - Out	N/A - Out

Risk scoping for WFD objectives	Scheme Elements	New onshore substation (Bolney Road/ Kent Street)			
	Scheme Phase	Construction (and decommissioning)		Operation and Maintenance	
	WFD Waterbody area	Within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Wider Waterbody catchment	Within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Wider Waterbody catchment
	Scheme Element	Installation of a new onshore substation and all associated works including enabling works)		Maintenance of the new onshore substation	Maintenance of the new onshore substation
	Pathway to TraC /Coastal water body?	Direct (overland flow)	Indirect (infiltration)		
WFD Element *(Receptor)*	Source of impacts	Ground disturbance and mobilisation of sediments/ contaminants during the construction of the new onshore substation. Also storage of fuels, and chemicals at the substation site. The footprint of the onshore substation will be approximately 6ha, A temporary works area will be 2.5ha in area. Works will include earthworks, vegetation clearance, access road construction, installation of drainage systems, installation of a temporary construction compound, delivery of materials, plant, machinery and fuel, and any earthworks necessary for the installation of the substation foundations, trenches ducts and pits. Other relevant works include installation of underground services and substation foundations, the control and switchgear buildings and plant buildings, construction of the oil		Occasional use of fuels and chemicals. Routine maintenance of substation will be limited. Monitoring of the onshore substation will be done remotely using CCTV. Unscheduled maintenance would typically involve small number of vehicles to infrequently replace equipment, which is anticipated to be short term and yield minimal disturbance	
WFD elements for Transitional: Ecological Biology	Invertebrates	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)
	Macroalgae	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)
	Phytoplankton	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)

delivery of target status

Risk scoping for WFD objectives		Scheme Elements	New onshore substation (Bolney Road/ Kent Street)			
		Scheme Phase	Construction (and decommissioning)		Operation and Maintenance	
		WFD Waterbody area	Within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Wider Waterbody catchment	Within TraC, within 25m of TraC waterbody Boundary and unnamed channels in TrAC catchment	Wider Waterbody catchment
		Scheme Element	Installation of a new onshore substation and all associated works including enabling works)		Maintenance of the new onshore substation	Maintenance of the new onshore substation
		Pathway to TraC /Coastal water body?	Direct (overland flow)	Indirect (infiltration)		
H Morph	Morphological conditions	Predicted change to status of element/receptor and predicted impact on d (green = unlikely, amber = possibly, red = likely)	SCREENED/SCOPED OUT - No in TraC waterbody channel changes	SCREENED/SCOPED OUT - No in TraC waterbody channel changes	SCREENED/SCOPED OUT - No in TraC waterbody channel changes	SCREENED/SCOPED OUT - No in TraC waterbody channel changes
Physio-chemical	Dissolved Inorganic Nitrogen		SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)
	Dissolved oxygen		SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)
Specific pollutants						
WFD elements for Transitional: Chemical	Priority hazardous substances & Priority Substances		SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)	SCREENED/SCOPED OUT: no infrastructure located within or near to TrAC catchment (approx. 6km away)
	Other Pollutants					

Waterbody Screening (Stated In where a SCREENED/ SCOPED IN activity is within water body screening	Sussex Coastal	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Arun TrAC (including IDB unnamed IDB ditches in catchment)	N/A - Out	N/A - Out	N/A - Out	N/A - Out
	Adur TrAC (including unnamed channels in TrAC catchment)	N/A - Out	N/A - Out	N/A - Out	N/A - Out

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Groundwater waterbody risk screening

Risk scoping for WFD objectives				
		Proposed Development Elements	**Landfall works**	
		Development Phase	**Construction (and Decommissioning)**	**Operation and Maintenance**
		WFD Waterbody area	**On top of WFD Groundwater Body**	**On top of WFD Groundwater Body**
		Development Element	**Construction of trenchless crossing (likely HDD), Transition Joint Bay (TJB) and temporary landfall compound**	**Permanent Landfall TJB**
		Pathway to GW water body?	**Indirect (Infiltration)**	**Indirect (Infiltration)**
	WFD Element *(Receptor)*	**Source of impacts**	Ground disturbance and mobilisation of sediments/ contaminants during construction of the landfall and associated earthworks. Dewatering from excavations.	Routine maintenance of landfall will be limited (every few years) via inspection point/ manhole
WFD elements for Groundwater: Quantity **Groundwater level**	**Quantitative dependent surface water body status**	**nd predicted impact on delivery of target status** **= possibly, red = likely)**	SCREENED/SCOPED IN: Dewatering, ground disturbance from excavations have potential to result in pathway changes between groundwaters and surface waters. Further assessment Required.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater.
	Groundwater dependent terrestrial ecosystems (GWDTEs)		SCREENED/SCOPED IN: Possible reduction in groundwater flow and reduced groundwater levels in groundwater supported wetlands affecting GWDTEs. Further assessment required	SCREENED/SCOPED OUT: No anticipated changes to water quality to groundwater supported wetlands affecting GWDTEs.
	Saline and other intrusions		SCREENED/SCOPED OUT: Excavation of TJB and HDD and associated dewatering will be shallow so unlikely to cause or affect any saline intrusion (relative to existing conditions).	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater. Any required maintenance would be minimal and have little effect on saline intrusions.
	Water balance		SCREENED/SCOPED IN: Construction of foundations and ground disturbance etc may interact with groundwater and affect existing saline intrusion. Further assessment required	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater. Any required maintenance would be minimal and have little effect on groundwater flow.

Risk scoping for WFD objectives				
	Proposed Development Elements		Landfall works	
	Development Phase		Construction (and Decommissioning)	Operation and Maintenance
	WFD Waterbody area		On top of WFD Groundwater Body	On top of WFD Groundwater Body
	Development Element		Construction of trenchless crossing (likely HDD), Transition Joint Bay (TJB) and temporary landfall compound	Permanent Landfall TJB
	Pathway to GW water body?		Indirect (Infiltration)	Indirect (Infiltration)
WFD elements for Groundwater: Chemical General / conductivity	Chemical dependent surface water body status	Predicted change to status of element/receptor an (green = unlikely, amber =	SCREENED/SCOPED IN: Dewatering for HDD has the potential to result in pollutants interacting between groundwater and surface waters, changing water qualities. Further assessment required.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater. Any required maintenance would be minimal and have little effect on groundwater quality.
	Groundwater dependent terrestrial ecosystems (GWDTEs)		SCREENED/SCOPED IN: Possible changes to water quality in groundwater supported wetlands affecting GWDTEs. Further assessment required	SCREENED/SCOPED OUT: No anticipated changes to water quality to groundwater supported wetlands affecting GWDTEs.
	Saline and other intrusions		SCREENED/SCOPED OUT: Excavation of TJB and HDD and associated dewatering will be shallow so unlikely to cause or affect any saline intrusion (relative to existing conditions).	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater. Any required maintenance would be minimal and have little effect on saline and other intrusions.
	Chemical test		SCREENED/SCOPED IN: Pathway changes for HDD has the potential to affect the flow and movement of contaminants to groundwaters. Further assessment Required.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater. Any required maintenance would be minimal and have little effect on groundwater quality.

Waterbody Screening (Stated In where a SCREENED/SCOPED IN activity is within water body screening limits where applicable)*	Littlehampton Anticline West	In	N/A - Out
	Littlehampton Anticline East	N/A - Out	N/A - Out
	Sussex Lambeth Group	N/A - Out	N/A - Out
	Worthing Chalk	N/A - Out	N/A - Out
	Lower Greensand Adur and Ouse	N/A - Out	N/A - Out
	Adur and Ouse Hastings Beds	N/A - Out	N/A - Out

Risk scoping for WFD objectives			Onshore cable circuits	
		Proposed Development Elements		
		Development Phase	Construction (and Decommissioning)	Operation and Maintenance
		WFD Waterbody area	On top of WFD Groundwater Body	On top of WFD Groundwater Body
		Development Element	Onshore cable circuit trenching and joint bay construction	Onshore cable circuits and joint bays
		Pathway to GW water body?	Indirect (Infiltration)	Indirect (Infiltration)
	WFD Element *(Receptor)*	Source of impacts	Assumed 1.2m deep target depth of trench, approx. 2 - 4m wide at surface and 0.9m wide at base. Includes joint bays typically every 750 - 950m. JB will be 4m wide by 14m in length. Watercourse crossings considered separately - see adjacent	
WFD elements for Groundwater: Quantity	Quantitative dependent surface water body status		SCREENED/SCOPED OUT: Dewatering and ground disturbance for cable circuits has the potential to reduce flows and levels and interactions between groundwater and surface waters. However, this effect is likely to be shallow and not significant.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing trenches. Any excavations required would be minimal and have little effect on groundwater flow and quantity.
Groundwater level	Groundwater dependent terrestrial ecosystems (GWDTEs)		SCREENED/SCOPED OUT: Dewatering for foundations and ground disturbance unlikely to result in adverse quantity effects on GWDTEs.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing trenches. Any excavations required would be minimal and have little effect on groundwater flow and quantity.
	Saline and other intrusions		SCREENED/SCOPED OUT: Dewatering for foundations and ground disturbance unlikely to result in saline intrusion.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing trenches. Any excavations required would be minimal and have little effect on groundwater flow and quantity.
	Water balance	Risk and predicted impact on delivery of target status (green = unlikely, amber = possibly, red = likely)	SCREENED/SCOPED OUT: Dewatering for foundations and ground disturbance unlikely to affect water balance.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing trenches. Any excavations required would be minimal and have little effect on groundwater flow and quantity.

Risk scoping for WFD objectives				
			Onshore cable circuits	
	Proposed Development Elements			
	Development Phase		Construction (and Decommissioning)	Operation and Maintenance
	WFD Waterbody area		On top of WFD Groundwater Body	On top of WFD Groundwater Body
	Development Element		Onshore cable circuit trenching and joint bay construction	Onshore cable circuits and joint bays
	Pathway to GW water body?		Indirect (Infiltration)	Indirect (Infiltration)
WFD elements for Groundwater: Chemical	Chemical dependent surface water body status	Predicted change to status of element/receptor an (green = unlikely, amber =	SCREENED/SCOPED OUT: Dewatering for foundations and ground disturbance unlikely to result in changes to groundwater quality.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing trenches. Any excavations required would be minimal and have little effect on groundwater flow and quantity.
General / conductivity	Groundwater dependent terrestrial ecosystems (GWDTEs)		SCREENED/SCOPED OUT: Dewatering for foundations and ground disturbance unlikely to result in changes to GWDTEs.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing trenches. Any excavations required would be minimal and have little effect on groundwater flow and quantity.
	Saline and other intrusions		SCREENED/SCOPED OUT: Construction of substations unlikely to cause or affect any saline intrusion.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing trenches. Any excavations required would be minimal and have little effect on groundwater flow and quantity.
	Chemical test		SCREENED/SCOPED OUT: Dewatering for foundations and ground disturbance unlikely to result in changes to groundwater chemical quality.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing trenches. Any excavations required would be minimal and have little effect on groundwater flow and quantity.

Waterbody Screening (Stated In where a SCREENED/SCOPED IN activity is within water body screening limits where applicable)*	Littlehampton Anticline West	N/A - Out	N/A - Out
	Littlehampton Anticline East	N/A - Out	N/A - Out
	Sussex Lambeth Group	N/A - Out	N/A - Out
	Worthing Chalk	N/A - Out	N/A - Out
	Lower Greensand Adur and Ouse	N/A - Out	N/A - Out
	Adur and Ouse Hastings Beds	N/A - Out	N/A - Out

Risk scoping for WFD objectives						
	Proposed Development Elements		**Onshore cable corridor watercourse crossings**			
	Development Phase		**Construction (and Decommissioning)**		**Operation and Maintenance**	
	WFD Waterbody area		**Onshore cable corridor watercourse crossings, on top of WFD Groundwater Body**	**Onshore cable corridor watercourse crossings, on top of WFD Groundwater Body**	**Onshore cable corridor watercourse crossings, on top of WFD Groundwater Body**	**Onshore cable corridor watercourse crossings, on top of WFD Groundwater Body**
	Development Element		**Onshore cable corridor watercourse crossings via trenchless Methods (e.g. HDD), at Main Rivers and other sensitive locations**	**Onshore cable corridor watercourse crossings via trenched Methods (e.g. open cut) at Other watercourses**	**Onshore cable corridor watercourse crossings via trenchless Methods (e.g. HDD), at Main Rivers and other sensitive locations**	**Onshore cable corridor watercourse crossings via trenched Methods (e.g. open cut) at Other watercourses**
		Pathway to GW water body?	**Indirect (Infiltration)**	**Indirect (Infiltration)**	**Indirect (Infiltration)**	**Indirect (Infiltration)**
	WFD Element *(Receptor)*	**Source of impacts**	Ground disturbance and mobilisation of sediments/ contaminants during construction of trenchless crossings. Dewatering from excavations. Likely to be HDD bore under one location to another under crossing. Where practicable trenching pits will be sited outside floodplains. Appropriate management and treatment of dewatering arising prior to discharge.	Ground disturbance and mobilisation of sediments/ contaminants during construction of trenched crossings. Fluming using a pipe, or over pumping. Installation of duct in trench with an approx. depth of 1.45m - 2m beneath watercourse. Installation over several days before reinstatement to	As per the onshore cable circuits, maintenance is assumed to be isolated and short term in nature yielding minimal disturbance	
WFD elements for Groundwater: Quantity **Groundwater level**	**Quantitative dependent surface water body status**		SCREENED/SCOPED IN: Will have potential impacts on the watercourse and potential pollution/sediment interactions between groundwaters and surface waters. Further assessment required	SCREENED/SCOPED IN: Will have potential for impacts on the watercourse and potential pollution/sediment interactions between groundwaters and surface waters. Further assessment required	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing underground ducts. Any excavations required would be minimal and have little effect on groundwater flow and quantity.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing underground ducts. Any excavations required would be minimal and have little effect on groundwater flow and
	Groundwater dependent terrestrial ecosystems (GWDTEs)		SCREENED/SCOPED IN: Possible reduction in groundwater flow and reduced groundwater levels in groundwater supported wetlands affecting GWDTEs. Further assessment required	SCREENED/SCOPED IN: Possible reduction in groundwater flow and reduced groundwater levels in groundwater supported wetlands affecting GWDTEs. Further assessment required	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing underground ducts. Any excavations required would be minimal and have little effect on groundwater flow and quantity.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing underground ducts. Any excavations required would be minimal and have little effect on groundwater flow and
	Saline and other intrusions		SCREENED/SCOPED OUT: HDD and associated dewatering will be shallow so unlikely to cause or affect any saline intrusion.	SCREENED/SCOPED OUT: Trenching and associated dewatering will be shallow so unlikely to cause or affect any saline intrusion.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing underground ducts. Any excavations required would be minimal and have little effect on groundwater flow and quantity.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing underground ducts. Any excavations required would be minimal and have little effect on groundwater flow and
	Water balance	**Level and predicted impact on delivery of target status (amber = possibly, red = likely)**	SCREENED/SCOPED IN: Dewatering may be required for HDD which has the potential to affect the flow between surface and groundwaters, and change flow pathways. Further assessment Required.	SCREENED/SCOPED IN: Dewatering may be required for open cut crossing which has the potential to affect the flow between surface and groundwaters, and change flow pathways. Further assessment Required.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing underground ducts. Any excavations required would be minimal and have little effect on groundwater flow and quantity.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing underground ducts. Any excavations required would be minimal and have little effect on groundwater flow and

Risk scoping for WFD objectives						
	Proposed Development Elements		Onshore cable corridor watercourse crossings			
	Development Phase		Construction (and Decommissioning)		Operation and Maintenance	
	WFD Waterbody area		Onshore cable corridor watercourse crossings, on top of WFD Groundwater Body	Onshore cable corridor watercourse crossings, on top of WFD Groundwater Body	Onshore cable corridor watercourse crossings, on top of WFD Groundwater Body	Onshore cable corridor watercourse crossings, on top of WFD Groundwater Body
	Development Element		Onshore cable corridor watercourse crossings via trenchless Methods (e.g. HDD), at Main Rivers and other sensitive locations	Onshore cable corridor watercourse crossings via trenched Methods (e.g. open cut) at Other watercourses	Onshore cable corridor watercourse crossings via trenchless Methods (e.g. HDD), at Main Rivers and other sensitive locations	Onshore cable corridor watercourse crossings via trenched Methods (e.g. open cut) at Other watercourses
	Pathway to GW water body?	Predicted change to status of element/receptor an (green = unlikely, amber =	Indirect (Infiltration)	Indirect (Infiltration)	Indirect (Infiltration)	Indirect (Infiltration)
WFD elements for Groundwater: Chemical General / conductivity	Chemical dependent surface water body status		SCREENED/SCOPED IN: Pathway changes for HDD has the potential to affect the flow and movement of contaminants to groundwaters. Further assessment Required.	SCREENED/SCOPED IN: Pathway changes for open has the potential to affect the flow and movement of contaminants to groundwaters. Further assessment Required.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing underground ducts. Any excavations required would be minimal and have little effect on groundwater flow and quantity.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing underground ducts. Any excavations required would be minimal and have little effect on groundwater flow and
	Groundwater dependent terrestrial ecosystems (GWDTEs)		SCREENED/SCOPED IN: Possible changes to water quality in groundwater supported wetlands affecting GWDTEs. Further assessment required	SCREENED/SCOPED IN: Possible changes to water quality in groundwater supported wetlands affecting GWDTEs. Further assessment required	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing underground ducts. Any excavations required would be minimal and have little effect on groundwater flow and quantity.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing underground ducts. Any excavations required would be minimal and have little effect on groundwater flow and
	Saline and other intrusions		SCREENED/SCOPED OUT: Excavation of HDD and associated dewatering will be shallow so unlikely to cause or affect any saline intrusion.	SCREENED/SCOPED OUT: Open cut crossing and associated dewatering will be shallow so unlikely to cause or affect any saline intrusion.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing underground ducts. Any excavations required would be minimal and have little effect on groundwater flow and quantity.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing underground ducts. Any excavations required would be minimal and have little effect on groundwater flow and
	Chemical test		SCREENED/SCOPED IN: Pathway changes for HDD has the potential to affect the flow and movement of contaminants to groundwaters. Further assessment Required.	SCREENED/SCOPED IN: Pathway changes for open cut has the potential to affect the flow and movement of contaminants to groundwaters. Further assessment Required.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing underground ducts. Any excavations required would be minimal and have little effect on groundwater flow and quantity.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater as will occur within existing underground ducts. Any excavations required would be minimal and have little effect on groundwater flow and

Waterbody Screening (Stated In where a SCREENED/SCOPED IN activity is within water body screening limits where applicable)*	Littlehampton Anticline West	In	In	N/A - Out	N/A - Out
	Littlehampton Anticline East	In	In	N/A - Out	N/A - Out
	Sussex Lambeth Group	In	In	N/A - Out	N/A - Out
	Worthing Chalk	In	In	N/A - Out	N/A - Out
	Lower Greensand Adur and Ouse	In	In	N/A - Out	N/A - Out
	Adur and Ouse Hastings Beds	In	In	N/A - Out	N/A - Out

Risk scoping for WFD objectives			Temporary construction haul road	
		Proposed Development Elements		
		Development Phase	Construction (and Decommissioning)	Operation and Maintenance
		WFD Waterbody area	On top of WFD Groundwater Body	On top of WFD Groundwater Body
		Development Element	New temporary haul road and associated Access Points	Not Applicable - temporary haul road to be removed at end of construction
		Pathway to GW water body?	Indirect (Infiltration)	Indirect (Infiltration)
	WFD Element *(Receptor)*	Source of impacts	Temporary construction haul road width 6m up to 10m (at its widest point). Depth typically 0.2m. Likely to be a mix of stone aggregate tracks, and those that do not have any hard materials (e.g. trackway panelling, or bogmatting) depending on ground conditions. In fluvial floodplain where practicable trackway will be used as the preferred option. Worst case of all stone is assumed. Watercourse crossings	The temporary haul road will not exist during operation
WFD elements for Groundwater: Quantity	Quantitative dependent surface water body status		SCREENED/SCOPED OUT: Potential for a change to water available at the surface waterbody from effects to the groundwater body are limited due to the surface nature of the access tracks.	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase
	Groundwater level			
	Groundwater dependent terrestrial ecosystems (GWDTEs)		SCREENED/SCOPED OUT: No anticipated reduction in groundwater flow and reduced groundwater levels in groundwater supported wetlands affecting GWDTEs.	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase
	Saline and other intrusions		SCREENED/SCOPED OUT: Construction all very close to the surface and therefore unlikely to have an interaction with groundwater in significant enough scales to affect existing saline intrusion.	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase
	Water balance		SCREENED/SCOPED OUT: Construction all very close to the surface and therefore unlikely to have an interaction with groundwater in significant enough scales to affect water balance	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase
		Risk and predicted impact on delivery of target status (green = possibly, red = likely)		

Risk scoping for WFD objectives				
	Proposed Development Elements		Temporary construction haul road	
	Development Phase		Construction (and Decommissioning)	Operation and Maintenance
	WFD Waterbody area		On top of WFD Groundwater Body	On top of WFD Groundwater Body
	Development Element		New temporary haul road and associated Access Points	Not Applicable - temporary haul road to be removed at end of construction
	Pathway to GW water body?		Indirect (Infiltration)	Indirect (Infiltration)
WFD elements for Groundwater: Chemical	General / conductivity	Chemical dependent surface water body status	Predicted change to status of element/receptor an (green = unlikely, amber =	SCREENED/SCOPED OUT: Construction all very close to the surface and therefore unlikely to have an interaction with groundwater	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase
		Groundwater dependent terrestrial ecosystems (GWDTEs)		SCREENED/SCOPED OUT: No anticipated changes to water quality to groundwater supported wetlands affecting GWDTEs.	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase
		Saline and other intrusions		SCREENED/SCOPED OUT: Construction all very close to the surface and therefore unlikely to have an interaction with groundwater in significant enough scales to affect existing saline intrusion.	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase
		Chemical test		SCREENED/SCOPED OUT: Construction all very close to the surface and therefore unlikely to have an interaction with groundwater. Limited changes to existing water pathways	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase

Waterbody Screening (Stated In where a SCREENED/SCOPED IN activity is within water body screening limits where applicable)*	Littlehampton Anticline West	N/A - Out	N/A - Out
	Littlehampton Anticline East	N/A - Out	N/A - Out
	Sussex Lambeth Group	N/A - Out	N/A - Out
	Worthing Chalk	N/A - Out	N/A - Out
	Lower Greensand Adur and Ouse	N/A - Out	N/A - Out
	Adur and Ouse Hastings Beds	N/A - Out	N/A - Out

Risk scoping for WFD objectives						
	Proposed Development Elements		**Temporary construction haul road watercourse crossings**			
	Development Phase		**Construction (and Decommissioning)**		**Operation and Maintenance**	
	WFD Waterbody area		**Temporary construction haul road watercourse crossings, on top of WFD groundwater body**	**Temporary construction haul road watercourse crossings, on top of WFD groundwater body**	**Haul road watercourse crossings, on top of WFD groundwater body**	**Temporary construction haul road watercourse crossings, on top of WFD groundwater body**
	Development Element		**Temporary construction haul Road watercourse Crossings - clear span bridges**	**Temporary construction haul road watercourse crossings - culverts**	**Not Applicable - temporary haul road crossing to be removed at end of construction**	**Not Applicable - temporary construction haul road crossing to be removed at end of construction**
		Pathway to GW water body?	**Indirect (Infiltration)**	**Indirect (Infiltration)**	**Indirect (Infiltration)**	**Indirect (Infiltration)**
	WFD Element *(Receptor)*	**Source of impacts**	Clear span bridges will be utilised for larger more sensitive crossings. They will be removed following the completion of construction (potentially in place up to 3.5 years)	Ground disturbance and mobilisation of sediments/ contaminants during the construction of temporary construction haul road watercourse crossings. Culverts to be used on smaller tributaries and drainage channels which	The temporary haul road crossing will not exist during operation	The temporary haul road crossing will not exist during operation
WFD elements for Groundwater: Quantity	**Groundwater level**	**Quantitative dependent surface water body status**	SCREENED/SCOPED OUT: Potential for a change to water available at the surface waterbody from effects to the groundwater body are limited due to the surface nature of the access tracks.	SCREENED/SCOPED IN: Interactions between groundwater and surface waters during culvert construction are possible. Further assessment required	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase
		Groundwater dependent terrestrial ecosystems (GWDTEs)	SCREENED/SCOPED OUT: No anticipated reduction in groundwater flow and reduced groundwater levels in groundwater supported wetlands affecting GWDTEs.	SCREENED/SCOPED OUT: No anticipated reduction in groundwater flow and reduced groundwater levels in groundwater supported wetlands affecting GWDTEs.	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase
		Saline and other intrusions	SCREENED/SCOPED OUT: Construction all very close to the surface and therefore unlikely to have an interaction with groundwater in significant enough scales to affect existing saline intrusion.	SCREENED/SCOPED OUT: Construction all very close to the surface and therefore unlikely to have an interaction with groundwater in significant enough scales to affect existing saline intrusion.	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase
		Water balance	SCREENED/SCOPED OUT: Construction all very close to the surface and therefore unlikely to have an interaction with groundwater in significant enough scales to affect water balance	SCREENED/SCOPED IN: Alteration to pathways between groundwater and surface waters during culvert construction are possible. Further assessment required	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase

Risk scoping and predicted impact on delivery of target status (green = unlikely, amber = possibly, red = likely)

Risk scoping for WFD objectives						
	Proposed Development Elements	Temporary construction haul road watercourse crossings				
	Development Phase	Construction (and Decommissioning)		Operation and Maintenance		
	WFD Waterbody area	Temporary construction haul road watercourse crossings, on top of WFD groundwater body	Temporary construction haul road watercourse crossings, on top of WFD groundwater body	Haul road watercourse crossings, on top of WFD groundwater body	Temporary construction haul road watercourse crossings, on top of WFD groundwater body	
	Development Element	Temporary construction haul Road watercourse Crossings - clear span bridges	Temporary construction haul road watercourse crossings - culverts	Not Applicable - temporary haul road crossing to be removed at end of construction	Not Applicable - temporary construction haul road crossing to be removed at end of construction	
	Pathway to GW water body?	Indirect (Infiltration)	Indirect (Infiltration)	Indirect (Infiltration)	Indirect (Infiltration)	
WFD elements for Groundwater: Chemical General / conductivity	Chemical dependent surface water body status	SCREENED/SCOPED OUT: Construction all very close to the surface and therefore unlikely to have an interaction with groundwater	SCREENED/SCOPED IN: Interactions between groundwater and surface waters during culvert construction are possible. Further assessment required	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase	Predicted change to status of element/receptor an (green = unlikely, amber =
	Groundwater dependent terrestrial ecosystems (GWDTEs)	SCREENED/SCOPED OUT: No anticipated changes to water quality to groundwater supported wetlands affecting GWDTEs.	SCREENED/SCOPED OUT: No anticipated changes to water quality to groundwater supported wetlands affecting GWDTEs.	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase	
	Saline and other intrusions	SCREENED/SCOPED OUT: Construction all very close to the surface and therefore unlikely to have an interaction with groundwater in significant enough scales to affect existing saline intrusion.	SCREENED/SCOPED OUT: Construction all very close to the surface and therefore unlikely to have an interaction with groundwater in significant enough scales to affect existing saline intrusion.	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase	
	Chemical test	SCREENED/SCOPED OUT: Construction all very close to the surface and therefore unlikely to have an interaction with groundwater. Limited changes to existing water pathways	SCREENED/SCOPED IN: Interactions between groundwater and surface waters during culvert construction are possible. Further assessment required	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase	SCREENED/SCOPED OUT: Temporary road infrastructure will not exist during operational phase	

Waterbody Screening (Stated In where a SCREENED/SCOPED IN activity is within water body screening limits where applicable)*	Littlehampton Anticline West	N/A - Out	In	N/A - Out	N/A - Out
	Littlehampton Anticline East	N/A - Out	In	N/A - Out	N/A - Out
	Sussex Lambeth Group	N/A - Out	In	N/A - Out	N/A - Out
	Worthing Chalk	N/A - Out	In	N/A - Out	N/A - Out
	Lower Greensand Adur and Ouse	N/A - Out	In	N/A - Out	N/A - Out
	Adur and Ouse Hastings Beds	N/A - Out	In	N/A - Out	N/A - Out

Risk scoping for WFD objectives				
		Proposed Development Elements	Temporary construction compounds (logistics & equipment along cable route)	
		Development Phase	Construction (and decommissioning)	Operation and Maintenance
		WFD Waterbody area	On top of WFD Groundwater Body	On top of WFD Groundwater Body
		Development Element	Temporary construction compound and associated hardstanding	Not Applicable - temporary compound to be removed at end of construction
		Pathway to GW water body?	Indirect (Infiltration)	Indirect (Infiltration)
	WFD Element *(Receptor)*	Source of impacts	Typically 50m by 75m in dimensions. Would take up to 3 - 4 months to establish and be in place for the duration of construction (up to 3.5 years)	
WFD elements for Groundwater: Quantity	Quantitative dependent surface water body status		SCREENED/SCOPED OUT: Potential for a change to water available at the surface waterbody from effects to the groundwater body are limited due to the surface nature of the compounds	SCREENED/SCOPED OUT: Temporary Compound will not exist during operational phase
Groundwater level	Groundwater dependent terrestrial ecosystems (GWDTEs)		SCREENED/SCOPED OUT: No anticipated reduction in groundwater flow and reduced groundwater levels in groundwater supported wetlands affecting GWDTEs.	SCREENED/SCOPED OUT: Temporary Compound will not exist during operational phase
	Saline and other intrusions		SCREENED/SCOPED OUT: Construction all very close to the surface and therefore unlikely to have an interaction with groundwater in significant enough scales to affect existing saline intrusion.	SCREENED/SCOPED OUT: Temporary Compound will not exist during operational phase
	Water balance		SCREENED/SCOPED OUT: Construction all very close to the surface and therefore unlikely to have an interaction with groundwater in significant enough scales to affect water balance	SCREENED/SCOPED OUT: Temporary Compound will not exist during operational phase

Risk scoping for WFD objectives

WFD elements for Groundwater: Quantity

Groundwater level

Risk scoping for WFD objectives and predicted impact on delivery of target status (green = possibly, red = likely)

Risk scoping for WFD objectives				
		Proposed Development Elements	Temporary construction compounds (logistics & equipment along cable route)	
		Development Phase	Construction (and decommissioning)	Operation and Maintenance
		WFD Waterbody area	On top of WFD Groundwater Body	On top of WFD Groundwater Body
		Development Element	Temporary construction compound and associated hardstanding	Not Applicable - temporary compound to be removed at end of construction
		Pathway to GW water body?	Indirect (Infiltration)	Indirect (Infiltration)
WFD elements for Groundwater: Chemical General / conductivity	Chemical dependent surface water body status	Predicted change to status of element/receptor an (green = unlikely, amber =	SCREENED/SCOPED OUT: Construction all very close to the surface and therefore unlikely to have an interaction with groundwater	SCREENED/SCOPED OUT: Temporary Compound will not exist during operational phase
	Groundwater dependent terrestrial ecosystems (GWDTEs)		SCREENED/SCOPED OUT: No anticipated changes to water quality to groundwater supported wetlands affecting GWDTEs.	SCREENED/SCOPED OUT: Temporary Compound will not exist during operational phase
	Saline and other intrusions		SCREENED/SCOPED OUT: Construction all very close to the surface and therefore unlikely to have an interaction with groundwater in significant enough scales to affect existing saline intrusion.	SCREENED/SCOPED OUT: Temporary Compound will not exist during operational phase
	Chemical test		SCREENED/SCOPED OUT: Construction all very close to the surface and therefore unlikely to have an interaction with groundwater. Limited changes to existing water pathways	SCREENED/SCOPED OUT: Temporary Compound will not exist during operational phase

Waterbody Screening (Stated In where a SCREENED/SCOPED IN activity is within water body screening limits where applicable)*	Littlehampton Anticline West	N/A - Out	N/A - Out
	Littlehampton Anticline East	N/A - Out	N/A - Out
	Sussex Lambeth Group	N/A - Out	N/A - Out
	Worthing Chalk	N/A - Out	N/A - Out
	Lower Greensand Adur and Ouse	N/A - Out	N/A - Out
	Adur and Ouse Hastings Beds	N/A - Out	N/A - Out

Risk scoping for WFD objectives				
		Proposed Development Elements	**New onshore substation (Bolney Road/ Kent Street)**	
		Development Phase	**Construction (and decommissioning)**	**Operation and Maintenance**
		WFD Waterbody area	**On top of WFD Groundwater Body**	**On top of WFD Groundwater Body**
		Development Element	**Installation of a new substation and all associated works including enabling works)**	**Maintenance of the onshore substation**
		Pathway to GW water body?	**Indirect (Infiltration)**	**Indirect (Infiltration)**
	WFD Element *(Receptor)*	**Source of impacts**	The footprint of the onshore substation will be approximately 6ha, A temporary works area will be 2.5ha in area. Works will include earthworks, vegetation clearance, access road construction, installation of drainage systems, installation of a temporary construction compound, delivery of materials, plant, machinery and fuel, and any earthworks necessary for	Routine maintenance of substation will be limited. Monitoring of the onshore substation will be done remotely using CCTV. Unscheduled maintenance would typically involve small number of vehicles to infrequently replace equipment, which is anticipated to be short term and yield minimal disturbance
WFD elements for Groundwater: Quantity	**Quantitative dependent surface water body status**		SCREENED/SCOPED OUT: Dewatering and ground disturbance for foundations has the potential to reduce flows and levels and interactions between groundwater and surface waters. However, this effect is likely to be shallow and not significant.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater. Any excavations required would have little effect on groundwater flow and quantity.
Groundwater level	**Groundwater dependent terrestrial ecosystems (GWDTEs)**		SCREENED/SCOPED OUT: Dewatering for foundations and ground disturbance unlikely to result in adverse quantity effects on GWDTEs.	SCREENED/SCOPED OUT: No anticipated reduction in groundwater flow and reduced groundwater levels in groundwater supported wetlands affecting GWDTEs.
	Saline and other intrusions		SCREENED/SCOPED OUT: Dewatering for foundations and ground disturbance unlikely to result in saline intrusion.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater. Any excavations required would have little effect on groundwater flow and quantity.
	Water balance	**Groundwater status and predicted impact on delivery of target status (green = unlikely, amber = possibly, red = likely)**	SCREENED/SCOPED OUT: Dewatering for foundations and ground disturbance unlikely to affect water balance.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater. Any excavations required would have little effect on groundwater flow and quantity.

Risk scoping for WFD objectives				
	Proposed Development Elements	New onshore substation (Bolney Road/ Kent Street)		
	Development Phase	Construction (and decommissioning)	Operation and Maintenance	
	WFD Waterbody area	On top of WFD Groundwater Body	On top of WFD Groundwater Body	
	Development Element	Installation of a new substation and all associated works including enabling works)	Maintenance of the onshore substation	
	Pathway to GW water body?	Indirect (Infiltration)	Indirect (Infiltration)	
WFD elements for Groundwater: Chemical	Predicted change to status of element/receptor an (green = unlikely, amber =			
General / conductivity	Chemical dependent surface water body status	SCREENED/SCOPED OUT: Dewatering for foundations and ground disturbance unlikely to result in changes to groundwater quality.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater. Any excavations required would have little effect on groundwater quality.	
	Groundwater dependent terrestrial ecosystems (GWDTEs)	SCREENED/SCOPED OUT: Dewatering for foundations and ground disturbance unlikely to result in changes to GWDTEs.	SCREENED/SCOPED OUT: No anticipated changes to water quality to groundwater supported wetlands affecting GWDTEs. Standard design measures ensure minimal chance of effects reaching GWDTEs.	
	Saline and other intrusions	SCREENED/SCOPED OUT: Construction of substations unlikely to cause or affect any saline intrusion.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater. Any excavations required would have little effect on groundwater quality.	
	Chemical test	SCREENED/SCOPED OUT: Dewatering for foundations and ground disturbance unlikely to result in changes to groundwater chemical quality.	SCREENED/SCOPED OUT: Routine and non-routine maintenance activities during the operational phase are unlikely to have an interaction between infrastructure and groundwater. Any excavations required would have little effect on groundwater quality.	

Waterbody Screening (Stated In where a SCREENED/SCOPED IN activity is within water body screening limits where applicable)*	Littlehampton Anticline West	N/A - Out	N/A - Out
	Littlehampton Anticline East	N/A - Out	N/A - Out
	Sussex Lambeth Group	N/A - Out	N/A - Out
	Worthing Chalk	N/A - Out	N/A - Out
	Lower Greensand Adur and Ouse	N/A - Out	N/A - Out
	Adur and Ouse Hastings Beds	N/A - Out	N/A - Out

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Acronyms

Acronym	Definition
TJB	Transition Joint Bay
HDD	Horizontal Directional Drilling
JB	Joint Bay
CCTV	Closed Circuit Television
WFD	Water Framework Directive
TRaC	Transitional and Coastal

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Annex C
Further assessment

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The further assessment in this Annex has been undertaken based on the Rampion 2 activities as a whole rather than undertaking a separate further assessment for the individual activities that take place within each individual water body. As the design of the Rampion 2 infrastructure, in many cases, is not proposed to vary significantly from water body to water body, the approach adopted here provides one assessment for each activity / infrastructure type per water body category (i.e., river, lake, coastal / transitional, groundwater). These generic assessments are provided in the following tables **Table C-20** to **Table C-22**.

As discussed in **Appendix 26.3: Water Framework Directive Compliance Assessment, Volume 4** of the ES (Document Reference: 6.4.26.3), many activities / infrastructure types do not substantially vary in design when located within more than one water body. Furthermore, most of the embedded environmental measures that are proposed would also be generally applied across the whole Proposed Development and would be unlikely to vary from water body to water body. Therefore, a generic further assessment of each activity / infrastructure type is presented rather than providing unnecessary repetition that is of no value to the assessment.

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Table C-20 Further impact assessment for onshore landfall and onshore cable circuits (including onshore cable corridor watercourse crossings)

Water Framework Directive (WFD) element	WFD sub-element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
RIVER WATER BODIES (Ryebank Rife, Black Ditch (W Sussex), Honeybridge Stream, Adur (Lockbridge), Adur East (Sakeham), Cowfold Stream, Adur (East)			
Hydromorphological Supporting Elements	Quantity and dynamics of flow	C-5, 17, C-18, C-19, C-122, C-138, C-139 Appropriate (trenchless and trenched) cable watercourse crossing design and installation C-123 Appropriate standoff distances from watercourses for trenchless pits C-77, C-141, C-142 Management of dewatered groundwater, and Environmental Permit for Discharge Activity C-121, C-140 Effective drainage so as to not increase baseline runoff rates C-19, C-29, C-141 Good construction practices for trenching C-28 Land drainage management C-120,129 Works areas constructed from semi – permeable aggregate where possible C-130, C-131, C-133, C-135 Appropriate standoff distances and methodologies for topsoil stockpiling	<u>Construction of trenchless (likely HDD) cable watercourse crossing at Landfall Site, and along the onshore cable corridor:</u> Any dewatering requirements would be associated solely with the trenchless (e.g. HDD) entry and exit at either end of the crossing. As such, dewatering volumes would be of low volume and short duration such that there would be no effects on adjacent watercourse baseflow. Should the small quantities of dewatered groundwater be discharged to an adjacent watercourse there would be only a negligible change on flow regime, on account of the fact that HDD crossings are associated with large watercourses with substantial baseline flow volumes. <u>Trenched cable laying along the onshore cable corridor:</u> Any dewatering requirements to facilitate the necessary conditions for cable installation would be of shallow depth and low volume (both depending on ground conditions, but a typical depth of 1.2m to the base of the trench is assumed) and short duration (typically dewatering would not take place at one individual location for more than several days) such that there would be no effects on adjacent watercourse baseflow. Should the low quantities of dewatered groundwater be discharged to an adjacent watercourse any effects on the baseline flow volume would be negligible. <u>Open cut cable watercourse crossings along the onshore cable corridor:</u> The installation of open cut watercourse crossings would generally be achieved by localised damming of the flow upstream of the proposed crossing location, with overpumping of water to leave a dry area in which to install the cables. This would naturally lead to a period of localised flow regime alteration. During this period, which is likely to be less than several days in duration, there would be a temporary change in both the quantity and dynamics of flow over a short, localised extent, upstream and downstream of each crossing. The upstream damming is likely to locally increase water quantity and reduce flow / velocity variability due to the impounding of flow. The extent to which these effects will propagate upstream of the dam would depend on the amount of flow within and gradient of the watercourse. The discharge location of the overpumped water, downstream of the crossing, is likely to be a point discharge rather than being spread across the full width of the channel. However, it is anticipated that the full channel width would be occupied with normal flow quantity and variability within a short distance of the discharge point. The channel that falls between the damming and discharge points would have all recognisable flow removed from it until the cables are installed and the bed and bank material have been reinstated, when the overpumping of water is no longer necessary. This process is likely to last less than several days in duration. Whilst these local alterations to the quantity and dynamics of flow are not insignificant, the effects would be fully reversible once the flow is re-connected following onshore cable installation. Once the cables are installed, the baseline quantity of water within the channel and morphological conditions of the channel cross-section would be re-established. Therefore, the baseline quantity and dynamics of flow would be restored within approximately less than several days.

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Water Framework Directive (WFD) element	WFD sub-element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
			Considering the scale and duration of these activities in the context of WFD water body size and the River Basin Management Plan (RBMP) reporting timescales, there is a high degree of confidence that the localised and short duration changes in the quantity and dynamics of flow would not have any effect on WFD water body status. Effects on hydromorphology quality element: Based on the criteria set out in Table 26-23 of Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26), and considering the implementation of the embedded environmental measures, there would be a Low magnitude of change on quantity and dynamics of flow. However, this would be for a very short duration and would be fully reversible. There would be no need to provide additional mitigation to facilitate compliance with WFD for all phases of the Proposed Development.
Hydromorphological Supporting Elements	River continuity (lateral and longitudinal)	None required None required C-5, C-17, C-18, C-19, C-122, C-138, C-139 Appropriate (Trenchless and Trenched) cable watercourse crossing design and installation C-130, C-131, C-133, C-135 Appropriate standoff distances and methodologies for topsoil stockpiling C-19, C-29, C-141, C-154 Good construction practices for trenching	<u>Trenched cable laying along the onshore cable corridor:</u> There would be no effects on river continuity as there would be no in-channel works. <u>Trecnhless (e.g. HDD) cable watercourse crossing along the onshore cable corridor:</u> There would be no effects on river continuity as there would be no in-channel works. <u>Open cut watercourse crossing along the onshore cable corridor:</u> Construction / decommissioning and maintenance works to facilitate open cut cable watercourse crossings would not result in any permanent reduction in the lateral connectivity of river flow and the adjacent floodplain, as topsoil and sediment that is removed in the trenching process would be reinstated on completion of the onshore cable installation. Similarly, the interruption of longitudinal river continuity as a result of temporary damming and overpumping of water (for a period of less than several days) would be fully reversed on completion of cable installation. Considering the scale and duration of these activities in the context of WFD water body size and RBMP reporting timescales, there is a high degree of confidence that the effects of these localised changes in the river continuity would not have any effect on WFD water body status. Effects on hydromorphology quality element: Based on the criteria set out in Table 26-23 of Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26) and considering implementation of embedded environmental measures, there would be a Negligible magnitude of change on river continuity. There would be no need to provide additional mitigation to facilitate compliance with WFD for all phases of the Proposed Development.
Hydromorphological Supporting Elements	River width and depth variation	None required C-5, C-17, C-18, C-19, C-122, C-138, C-139 Appropriate (Trenchless and Trenched) cable watercourse crossing design and installation	<u>Trenched cable laying along the onshore cable corridor:</u> There would be no effects on river width and depth variation as there would be no in-channel works. <u>Trenchless cable watercourse crossing along the onshore cable corridor:</u> There would be no effects on river width and depth variation as there would be no in-channel works and implementation of embedded environmental measures on appropriate cable watercourse crossing design and installation would ensure that trenchless entry and exit pits are located sufficiently clear of river banks to be exposed by lateral channel erosion.

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Water Framework Directive (WFD) element	WFD sub-element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
		C-19, C-29, C-141, C-154 Good construction practices for trenching	<u>Open cut watercourse crossing along the onshore cable corridor:</u> The construction / decommissioning and maintenance works to facilitate open cut cable watercourse crossings would result in no perceptible alteration of baseline river width and depth variation as the sediment and cross-sectional form that is removed in the trenching process would be reinstated on completion of onshore cable installation (a period of less than several days in duration). This would be secured by implementation of embedded environmental measures on appropriate cable watercourse crossing design and installation. Considering the scale and duration of these activities in the context of WFD water body size and RBMP reporting timescales, there is a high degree of confidence that the effects of these localised changes in river continuity would not have any effect on WFD water body status. Effects on hydromorphology quality element: Based on criteria set out in Table 26-23 of Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26), and considering implementation of embedded environmental measures, there would be a Negligible magnitude of change on river width and depth variation. There would be no need to provide mitigation to facilitate compliance with WFD for all phases of the Proposed Development.
Hydromorphological Supporting Elements	Structure and substrate of the river bed	C-130, C-131, C-133, C-135 Appropriate standoff distances and methodologies for topsoil stockpiling C-19, C-29, C-141, C-154 Good construction practices for trenching C-123 Appropriate standoff distances from watercourses for trenchless pits C-77, C-141, C-142 Management of dewatered groundwater, and Environmental Permit for Discharge Activity C-123 Appropriate standoff distances from watercourses for trenchless pits	<u>Trenched cable laying and trenchless (e.g. HDD) cable watercourse crossings along the onshore cable corridor:</u> Construction / decommissioning and maintenance works associated with cable trenching in floodplains and / or adjacent to watercourses and the excavation of trenchless starter and exit pits, either side of trenchless crossings, would result in short-term exposure and disturbance of ground resulting in generation of sediment in run-off. This is expected to be managed by embedded environmental measures such that levels of fine-grained sediment delivered to adjacent watercourses would be minimised as far as practicable. However, there may be a very minor, short-duration and localised change in structure and substrate of the river bed associated with delivery and transfer of fine-grained sediment as a result of the works that is temporarily elevated relative to baseline levels. <u>Open cut trenched cable watercourse crossing along the onshore cable corridor:</u> Construction / decommissioning and maintenance works to facilitate underground cable watercourse crossings would result in no perceptible alteration of the substrate of the river bed as the sediment and cross-sectional form that is removed in the trenching process would be reinstated on completion of the onshore cable installation. However, it would not be possible to replace the exact structure of the river bed which, in many cases, will have evolved over time into a natural grain size and fabric arrangement. Based on an assumption of 24 trenched cable watercourse crossings each with a worst-case width of 10m, there would be a total of 240m of watercourse trenching across the Water Environment Study Area during construction / decommissioning. This total trenched length would represent approximately 0.5% of the total length of mapped principal watercourses (48km) screened in within the water environment Study Area, which itself is a gross underestimation of the total watercourse length within the water environment Study Area. Even based on these reasonable worst-case assumptions, the scale of trenching is considered to be minimal. Furthermore, any effects would be short-lived and the structure of the river bed would become re-established following the first significant flow event after onshore cable installation.

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Water Framework Directive (WFD) element	WFD sub-element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
			It is possible that, following the reconnection of river flow once cables are installed, there would be a minor pulse of fine-grained sediment transported downstream associated with any loose/unconsolidated sediment that remains following covering of the trench. However, this is likely to be very short-lived and would be within the normal range of suspended sediment transport rates associated with natural bed/bank disturbance (e.g. small-scale bank erosion). Considering the scale and duration of these activities in the context of WFD water body size and the RBMP reporting timescales, there is a high degree of confidence that the effects of these localised changes in the river continuity would not have any effect on WFD water body status. Effects on hydromorphology quality element: Based on the criteria set out in Table 26-23 of Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26) and considering the implementation of embedded environmental measures, there would be a Negligible magnitude of change on structure and substrate of the river bed. There would be no need to provide additional mitigation to facilitate compliance with WFD for all phases of the Proposed Development.
Hydromorphological Supporting Elements	Connectivity with groundwater	C-77, C-141, C-142 Management of dewatered groundwater, and Environmental Permit for Discharge Activity C-19, C-29, C-141, C-154 Good construction practices for trenching C-5, C-17, C-18, C-19, C-122, C-138, C-139, C-234, C-235, C-236, C-241, C-246, C-251 Appropriate (Trenchless and Trenched) cable watercourse crossing design and installation C-227, C-250, C-253 Pollution prevention and remediation	<u>Trenched cable laying along the onshore cable corridor:</u> The works associated with onshore cable trenching in floodplains and / or adjacent to watercourses would not result in any alteration of the connectivity of river and groundwater bodies as there would be no in-channel works or structures introduced to the channel boundary. Furthermore, any dewatering requirements to facilitate the necessary conditions for onshore cable installation would be of shallow depth, low volume and short duration such that there would be no effects on adjacent watercourse baseflow. <u>Trenchless cable watercourse crossing along the onshore cable corridor:</u> Any dewatering requirements would be of shallow depth and associated with the starter and exit pits at either end of the crossing. As such, dewatering volumes would be of low volume and short duration such that there would be no effects on adjacent watercourse baseflow. It is possible that the trenchless drilling process may alter the baseline pathway between the river and the hyporheic zone. However, given the sufficient depth of the trenchless crossings below river beds (on the basis of the embedded environmental measures) and the very localised scale of this effect in the context of both river and groundwater bodies, it is logical to conclude that any change would be negligible relative to baseline conditions. <u>Open cut trenched cable watercourse crossing along the onshore cable corridor:</u> Given the localised scale of the trenched open cut cable installations (in the downstream direction and below the baseline river bed level) and the fact that the cables themselves would not provide any perceptible alteration of the pathway from rivers to the hyporheic zone, there is a high degree of confidence that any localised disturbance of the connectivity between watercourses and the underlying groundwater bodies would be negligible. Considering the scale and duration of any effects in the context of WFD water body size (both river and groundwater), there is a high degree of confidence that the effects of these localised changes on the connectivity with groundwater would not have any effect on WFD water body status.

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Water Framework Directive (WFD) element	WFD sub-element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
			Effects on hydromorphology quality element: Based on the criteria set out in Table 26-23 of Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26) and considering the implementation of the embedded environmental measures, there would be a Negligible magnitude of change on connectivity with groundwater. There would be no need to provide additional mitigation to facilitate compliance with WFD for all phases of the Proposed Development.
Hydromorphological Supporting Elements	Structure of the riparian zone	C-21, C-135 Riparian vegetation protection and maintenance	<u>Trenched cable laying, trenchless cable watercourse crossings, and open cut cable watercourse crossings along the onshore cable corridor:</u> The installation of cables may result in local alterations to the type of riparian vegetation present on the channel margins such that there would be sufficient clearance for periodic cable maintenance and / or repair works during their operational lifetime. However, given that cable maintenance will be minimal and targeted, it is likely that any localised removal of riparian vegetation would be negligible in relation to the length of existing riparian corridors. Effects on hydromorphology quality element: Based on the criteria set out in Table 26-23 of Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26) and considering the implementation of the embedded environmental measures, there would be a Negligible magnitude of change on the structure of the riparian zone. There would be no need to provide additional mitigation to facilitate compliance with WFD for all phases of the Proposed Development.
Physico-chemical quality elements **Chemical quality elements**	Ammonia (Phys-Chem) Phosphate Dissolved oxygen Temperature Specific Pollutants, Priority substances and Priority Hazardous substances	C-123 Appropriate standoff distances from watercourses for trenchless pits C-130, C-131, C-133, C-135 Appropriate standoff distances and methodologies for topsoil stockpiling C-19, C-29, C-141, C-154 Good construction practices for trenching C-69, C-143 Materials Management Plan and Unexpected Contamination Protocol C-5, C-17, C-18, C-19, C-122, C-138, C-139, C-234, C-236, C-241, C-246, C-251 Appropriate (Trenchless and Trenched) cable watercourse crossing design and installation C-19, C-29, C-141, C-154 Good construction practices for trenching	<u>Trenched cable laying, trenchless cable watercourse crossings, and open cut cable watercourse crossings along the onshore cable corridor:</u> Small indirect effects on existing baseline water quality could occur via disturbance of contaminated sediments. This could be within the channel and / or on the river banks at the location of open cut cable watercourse crossing installations, or disturbance of contaminated surface sediments at trenchless starter and exit pits or where cables are trenched through the floodplain and / or close to watercourses. This risk is greatest in respect of open cut cable crossings where a short term 'pulse' of contaminated water quality could propagate downstream once the flow is reconnected following completion of cable installation and reinstatement of bed and bank materials. However, it could also potentially occur as a result of short-term soil stockpiling alongside the trenched onshore cable corridor adjacent to watercourses. Considering implementation of embedded environmental measures and the scale and duration of any effects in the context of WFD water body size, there is a high degree of confidence that the effects of these localised and short duration changes on water quality would not have any effect on WFD water body status. Where construction / decommissioning and maintenance works coincide with areas that have historical landfills (for instance near Brookbarn and Old Mead Landfills north west of Littlehampton) the risk would be higher. These areas are identified in Chapter 24: Ground conditions, Volume 2 of the ES (Document Reference: 6.2.24), and appropriate embedded environmental measures on materials management and unexpected contamination protocol have been identified within to manage any effects on water quality. Direct effects, specifically on WFD chemical status, could occur as a result of accidental spillage or leakage of Polycyclic Aromatic Hydrocarbons (PAHs) associated with vehicle / machinery fuels and oils, or metals (from machinery itself) at or adjacent to the location of the trenched cable route, trenched cable watercourse crossing or trenchless starter / exit pits. Whilst embedded environmental measures relating to pollution prevention and remediation are expected to manage the occurrence of such effects as far as practicable, small residual effects (e.g. slow/gradual leaks directly into or adjacent to the watercourse) cannot be discounted. However, considering

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Water Framework Directive (WFD) element	WFD sub-element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
		C-8, C-76, C-129, C-149, C-151, C-167 Pollution prevention and remediation	the scale and duration of any effects in the context of WFD water body size, there is a high degree of confidence that the effects of localised and short duration changes in water quality would not have any effect on WFD water body status. Effects on identified Physico-chemical and Chemical quality elements: Based on criteria set out in Table 26-23 of Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26) and considering implementation of embedded environmental measures, there would be a Negligible magnitude of change associated with the installation of cables. There would be no need to provide additional mitigation to facilitate compliance with WFD for all phases of the Proposed Development.
Biological quality elements	Fish, Macrophytes and phytobenthos, and invertebrates	C-28 Land drainage management C-5, C-17, C-18, C-19, C-122, C-138, C-139, C-229 Appropriate (trenchless and trenched) cable watercourse crossing design C-123 Appropriate standoff distances from watercourses for trenchless pits C-19, C-29, C-141, C-154 Good construction practices for trenching C-8, C-76, C-129, C-149, C-151, C-167 Pollution prevention and remediation C-69, C-143 Materials Management Plan and Unexpected Contamination Protocol C-64, C-205, C-210 Aquatic ecological protection	<u>Trenched cable laying, trenchless cable watercourse crossings, and open cut trenched cable watercourse crossings along the onshore cable corridor:</u> Effects on biological quality elements are almost exclusively associated with changes to the hydromorphology and/or water quality of a watercourse that collectively make up the habitat upon which fish, macrophytes / phytobenthos and invertebrates are dependent. The main potential effect would be specifically related to mobilisation of sediments from cable crossings and short-term soil stockpiling adjacent to watercourses. This could result in a short-term pulse of sediments downstream, which could in turn harm the habitats of fish, macrophytes and phytobenthos, and invertebrates. Site specific biodiversity watercourse crossing surveys have been carried out as part of the terrestrial ecology assessment (as outlined in Chapter 22: Terrestrial ecology and nature conservation, Volume 2 of the ES (Document Reference: 6.2.22) and Appendix 22.6: Fisheries habitat survey report, Volume 4 of the ES (Document Reference: 6.4.22.6)). This identified a single watercourse crossing at Water Lane, Buncton which provides habitat of favourable condition for fish habitation. During a previous iteration of the design evolution presented in the PEIR (RED, 2021), this watercourse crossing at Water Lane, Buncton was proposed to be crossed by open cut trenching however, following site survey (Appendix 22.6: Fisheries habitat survey report, Volume 4 of the ES (Document Reference: 6.4.22.6)), it is proposed that this watercourse will be crossed by trenchless crossing methods (TC-19) to minimise potential effects on biological elements. A protocol for good practices in relation to aquatic ecological protection has also been developed and incorporated into a suite of embedded measures. Considering the implementation of embedded environmental measures and the scale and duration of any effects in the context of WFD water body size, there is a high degree of confidence that the effects of these localised and short duration changes on biological quality elements would not have any effect on WFD water body status. Effects on identified on Biological quality elements: Based on the criteria set out in Table 22-20 of Chapter 22: Terrestrial ecology and nature conservation, Volume 2 of the ES (Document Reference: 6.2.22), and considering the implementation of the embedded environmental measures, there would be a Very Low magnitude of change associated with cable crossings, and soil stockpiling. There would be no need to provide additional mitigation to facilitate compliance with WFD for all phases of the Proposed Development.
TRANSITIONAL AND COASTAL BODIES (Arun and Adur transitional water bodies and Sussex coastal water body)			

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Water Framework Directive (WFD) element	WFD sub-element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
Each of the construction activities, associated potential effects and embedded environmental measures presented above (in other rows of **Table C-1**) are of relevance to onshore construction activities proposed within the catchments of the Arun and Adur transitional water bodies. Trenchless crossings of the Arun and trenched crossings of unnamed unreportable ditch channels of the Adur are of most relevance. Conclusions of the assessment of effects on WFD elements and sub elements are applicable to these transitional water bodies. Therefore, considering implementation of embedded environmental measures, each potential effect is not likely to have a significant effect on the status of these water bodies and there would be no need to provide additional mitigation to facilitate compliance with WFD for all phases of the Proposed Development. It is assumed that implementation of embedded environmental measures associated with these activities will provide a sufficient level of protection for the Sussex coastal water body. Any residual effects would be minimal given the distance from the coastal water body as well as the considerable dilution associated with the pathway of effects to this receptor. There would be no effects on the WFD status of any transitional and coastal water bodies in the water environment Study Area as a result of onshore landfall and cabling works.			
GROUNDWATER BODIES (Littlehampton Anticline West, Littlehampton Anticline East, Sussex Lambeth Group, Lower Greensand Adur and Ouse)			
Groundwater Level elements	Quantitative dependent surface water body status	C-77, C-141, C-142 Management of dewatered groundwater, and Environmental Permit for Discharge Activity C-5, C-17, C-18, C-19, C-122, C-138, C-139 Appropriate (trenchless and trenched) cable watercourse crossing design and installation C-19, C-29, C-141, C-154 Good construction practices for trenching	<u>Dewatering effects during cable trenching, open cut and trenchless crossings along the onshore cable corridor on spring flows and base flows to watercourses:</u> During onshore cable construction, open cut trenches and trenchless methods may require dewatering to remove shallow inflows of groundwater. Where these construction methods are located within aquifers, these aquifers may be a source of groundwater flow to springs and base flow to watercourses that could be reduced by dewatering. Any springs or watercourses with a potential connection to the Proposed Development have been identified in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26). Considering the implementation of embedded environmental measures, this effect is not considered to be significant and unlikely to cause a deterioration in quantitative status for the good status groundwater bodies in the water environment Study Area.
Groundwater Level elements	Groundwater dependent terrestrial ecosystems (GWDTEs)	C-77, C-141, C-142 Management of dewatered groundwater, and Environmental Permit for Discharge Activity C-5, C-17, C-18, C-19, C-122, C-138, C-139 Appropriate (Trenchless and Trenched) cable watercourse crossing design and installation C-19, C-29, C-141, C-154 Good construction practices for trenching	<u>Dewatering effects during cable trenching, open cut and trenchless crossings along the onshore cable corridor on groundwater levels in GWDTEs</u> In Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26) and Appendix 26.1: Detailed water environment baseline information, Volume 4 of the ES (Document Reference: 6.4.26.1)) several potential GWDTEs have been identified within the water environment Study Area, with a potential connection to the Proposed Development. These wetlands are therefore being treated as potential quantitative receptors. Considering the implementation of embedded environmental measures, it is considered that any effect on the groundwater quantity serving these receptors would be negligible and unlikely to cause a deterioration in quantitative status for their associated groundwater bodies.

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Water Framework Directive (WFD) element	WFD sub-element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
Groundwater chemical elements	Groundwater dependent terrestrial ecosystems (GWDTEs)	Site Investigation Works at higher risk locations along the temporary onshore construction corridor C-69, C-143 Materials Management Plan and Unexpected Contamination Protocol C-8, C-76, C-129, C-149, C-151, C-167 Pollution prevention and remediation	Groundwater quality effects on GWDTEs from mobilisation of historic land contamination Historic landfill sites are situated adjacent to localised sections of the onshore cable route (e.g. Brook Barn and Old Mead Road Tip historical landfills north west of Littlehampton) as identified in **Chapter 24: Ground conditions, Volume 2** of the ES (Document Reference: 6.2.24). Earth movements during the construction phase of the Proposed Development has the potential to re-mobilise contaminants and, if a suitable pathway exists to groundwater, contaminate groundwater in aquifers supporting groundwater levels in GWDTEs. The GWDTEs which have been identified in **Chapter 26: Water environment, Volume 2** of the ES (Document Reference: 6.2.26) are situated remotely away from these potential higher risk areas of known contamination. Potential effects will be mitigated by site investigation which will identify areas of potential contamination and inform appropriate planning. Embedded good practice construction methods (such as the Materials Management Plan, Unexpected Contamination Protocol and a Pollution Prevention Plan) will in turn, prevent deterioration in status due to pollution of GWDTEs through a groundwater pathway.
Groundwater chemical elements	General chemical test	Site investigation works at higher risk locations along the temporary onshore construction corridor C-69, C-143 Materials Management Plan and Unexpected Contamination Protocol C-8, C-76, C-129, C-149, C-151, C-167, C-227, C-250, C-253 Pollution prevention and remediation C-234, C-236, C-241, C-246, C-251 Appropriate (Trenchless and Trenched) cable watercourse crossing design and installation	Groundwater quality effects from historic land contamination Historic landfill sites are situated adjacent to localised sections of the onshore cable route (e.g. Brook Barn and Old Mead Road Tip historical landfills north west of Littlehampton) as identified in **Chapter 24: Ground conditions, Volume 2** of the ES (Document Reference: 6.2.24). Earth movements during the construction phase of the Proposed Development has the potential to re-mobilise contaminants and, if a suitable pathway exists to groundwater, contaminate groundwater in a Principal or Secondary aquifer. Potential effects will be mitigated by site investigation works which will identify areas of potential contamination and inform appropriate planning and embedded good practice construction methods (such as the Materials Management Plan, Unexpected Contamination Protocol and a Pollution Prevention Plan) to prevent deterioration in status due to contamination of aquifers.

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Table C-30 Further impact assessment for onshore temporary construction haul roads and associated watercourse crossings (including bridges and culverts)

WFD element	WFD sub element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
RIVER WATER BODIES (Ryebank Rife, Black Ditch (W Sussex), Honeybridge Stream, Adur (Lockbridge), Adur East (Sakeham), Cowfold Stream, Adur (East)			
Hydromorphological Supporting Elements	Quantity and dynamics of flow	C-119, C-120, C-175 Appropriate haul road design and installation C-120, C-129 Works areas constructed from semi – permeable aggregate where possible C-77, C-141, C-142 Management of dewatered groundwater, and Environmental Permit for Discharge Activity C-130, C-131, C-133, C-135 Appropriate standoff distances and methodologies for topsoil stockpiling C-73, C-121, C-140 Effective drainage so as to not increase baseline runoff rates As above, plus: C-17, C-64, C-126, C-127, C-128, C-139, C-145, C-177, C-178, C-252. Appropriate haul road watercourse crossing design and implementation	<u>Temporary construction haul roads</u> There would be no effects on quantity and dynamics of flow as there would be no in channel works or alterations to the flow regime following the implementation of embedded environmental measures. <u>Temporary construction clear-span watercourse crossings</u> There would be no effects on quantity and dynamics of flow as there would be no in channel works or alterations to the flow regime associated with the construction of clear span access track watercourse crossings following the implementation of embedded environmental measures. <u>Temporary construction culverted watercourse crossings</u> The construction of culverted access track watercourse crossings would generally be achieved by localised damming of the flow upstream of the proposed crossing location, with overpumping of water to leave a dry area in which to install the culvert. This would naturally lead to a period of localised flow regime alteration. During this period, which is likely to be less than several days in duration, there would be a temporary change in both the quantity and dynamics of flow over a localised distance upstream downstream of each crossing. The upstream damming is likely to locally increase water quantity and reduce flow / velocity variability due to the impounding of flow. The extent to which these effects will propagate upstream of the dam would depend on the amount of flow within and gradient of the watercourse. The discharge location of the overpumped water, downstream of the crossing, is likely to be a point discharge rather than being spread across the full width of the channel. However, it is anticipated that the full channel width would be occupied with normal flow quantity and variability within a short distance of the discharge point.

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WFD element	WFD sub element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
			The channel that falls between the damming and discharge points would have all recognisable flow removed from it until the culvert is installed and overpumping of water is no longer necessary. This is likely to be less than one day in duration. Whilst these local alterations to the quantity and dynamics of flow are not insignificant, the effects would be fully reversible once the flow is re-connected following culvert installation. Once the culvert is installed, the baseline quantity of water within the channel would be re-established. Given the introduction of a straight and homogeneous culvert lining, it is likely that there may be some localised changes to more uniform flow types as water passes under the culvert. However, as the conveyance capacity of the channel would not be reduced as a result of any watercourse crossing, it is unlikely that any local change in flow dynamics would propagate any further than 10m up or downstream of the culvert itself. Considering the scale and duration of these activities in the context of WFD water body size and the RBMP reporting timescales, there is a high degree of confidence that the effects of these localised changes in the quantity and dynamics of flow would not have any effect on WFD water body status following the implementation of embedded environmental measures. Furthermore, as all of the access track watercourse crossings would be temporary, any effects are likely to be fully reversible once they are removed following the construction phase. Effects on hydromorphology quality element: Based on the criteria set out in Table 26-23 of Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26) there would be a Low magnitude of change on quantity and dynamics of flow. However, this would be for a very short duration and would be reversible. There would be no need to provide additional mitigation to facilitate compliance with WFD for all phases of the Proposed Development.
Hydromorphological Supporting Elements	River continuity (lateral and longitudinal)	None required	Temporary construction haul Roads

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WFD element	WFD sub element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
		C-17, C-182 Appropriate environmental permits and land drainage consents C-135 Appropriate standoff distances C-17, C-64, C-126, C-127, C-128, C-139, C-145, C-177, C-178, C-252. Appropriate haul road watercourse crossing design and implementation	As temporary construction haul roads would not involve any in channel works, and therefore would not affect the ability of water to connect either upstream / downstream or laterally with the adjacent floodplain, there would be no effects associated with river continuity. <u>Temporary construction clear-span watercourse crossings</u> There would be no effects on river continuity as there would be no in channel works (for example, piers or bank reinforcement) or alterations to the flow regime associated with the construction of clear span access track watercourse crossings following the implementation of embedded environmental measures. <u>Temporary construction culverted watercourse crossings</u> The temporary construction culverted access track watercourse crossings themselves would be enclosed structures that would result in a very minor / localised reduction of the lateral connectivity of river flow with the adjacent floodplain. Furthermore, as the culverts would be solid structures, they would locally restrict the ability of the watercourse to alter its planform via changes to bed and bank morphology through changing erosion / deposition patterns. Whilst culvert beds are likely to reduce the flow resistance relative to the background conditions (i.e. the existing river channel boundary), the conveyance capacity of the channel would not be reduced as a result of any watercourse crossing, in line with the embedded environmental measures. This would be accommodated through appropriate hydraulic design, and via the permitting process for in-channel works. Therefore, it would be unlikely for there to be any discernible change in water and / or sediment transfer relative to baseline conditions. On the basis that trenchless crossings will not require temporary construction culverted haul road crossings, it is assumed that there will be a similar number to the number of open cut watercourse / drain crossings (24) identified in the crossing schedule in **Appendix 4.1:**

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WFD element	WFD sub element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
			Crossings schedule, Volume 4 of the ES (Document Reference: 6.4.4.1). Based on a worst-case estimate of width at 10m, there would be a total of 240m of culverted watercourse. These would be installed for a period of three years, during construction, after which they would be removed. This total culvert length would represent approximately 0.5% of the total length of mapped WFD principal watercourses in the water environment Study Area (48km). Even based on these reasonable worst-case assumptions, the scale of culverting is considered to be minimal. Considering the scale and duration of these activities in the context of WFD water body size, there is a high degree of confidence that the effects of any localised changes in the river continuity would not have any effect on WFD water body status. Furthermore, as all of the road track watercourse crossings would be temporary, any effects are likely to be fully reversible once they are removed following the construction phase. Effects on hydromorphology quality element: Based on the criteria set out in Table 26-23 of Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26)) and considering the implementation of the embedded environmental measures, there would be a Negligible magnitude of change on river continuity. There would be no need to provide additional mitigation to facilitate compliance with WFD for all phases of the Proposed Development.
Hydromorphological Supporting Elements	River width and depth variation	None required	Temporary construction haul roads There would be no effects on river width and depth variation as there would be no in channel works.
		C-17, C-182 Appropriate environmental permits and land drainage consents C-135 Appropriate standoff distances C-17, C-64, C-126, C-127, C-128, C-139, C-145 C-177, C-178. Appropriate haul road	Temporary construction clear-span watercourse crossings There would be no effects on river width and depth variation as there would be no in channel works (for example, piers or bank reinforcement) or alterations to the flow regime associated with the construction of clear span access track watercourse crossings, provided

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WFD element	WFD sub element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
		watercourse crossing design and implementation	bridge abutments are set back sufficiently from the banktop. This would be secured via the implementation of embedded environmental measures. <u>Temporary construction culverted watercourse crossings</u> The temporary construction culverted access track watercourse crossings would have a localised effect on both the planform and cross-sectional form of all relevant watercourses. The culverts would introduce a straight planform and a uniform cross-section. The degree of change that this may introduce would be dependent on the type of watercourse in question. For example, a culverted crossing of a man-made drainage ditch (making up approximately 10 of the 24 (cable) watercourse crossings) is unlikely to introduce much of a change relative to the baseline planform and cross-section of the channel. However, culverted crossings of relatively natural watercourses (making up approximately 10 of the 24 (cable) watercourse crossings) are likely to experience a greater magnitude of change as their baseline width and depth variability is likely to be greater. However, as the maximum culvert crossing would not extend beyond 10m of river length, it is reasonable to conclude that these effects would be very localised. Furthermore, the avoidance of locating culverts in obviously mobile reaches of watercourse would further limit any change in width and depth variation relative to the baseline conditions. Considering the scale of any effects in the context of WFD water body size (the entire culverted length across the Study Area is only approximately 0.5% of the length of the mapped length of principal WFD watercourses in the water environment Study Area), there is a high degree of confidence that the effects of these localised changes on river width and depth variation would not have any effect on WFD water body status. Furthermore, as the majority of access track watercourse crossings would be temporary, any effects are likely to be fully reversible once they are removed following the construction phase.
		As above	Effects on hydromorphology quality element: Based on the criteria set out in Table 26-23 of Chapter 26: Water

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WFD element	WFD sub element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
			environment, Volume 2 of the ES (Document Reference: 6.2.26) and considering the implementation of the embedded environmental measures, there would be a Negligible magnitude of change on river width and depth variation. There would be no need to provide mitigation to facilitate compliance with WFD for all phases of the Proposed Development.
Hydromorphological Supporting Elements	Structure and substrate of the river bed	None required	<u>Temporary construction haul roads</u> There would be no effects on structure and substrate of the river bed as there would be no in channel works.
		C-17, C-182 Appropriate environmental permits and land drainage consents C-135 Appropriate standoff distances C-17, C-64, C-126, C-127, C-128, C-139, C-145, C-177, C-178, C-229, C-252. Appropriate haul road watercourse crossing design and implementation	<u>Temporary construction clear-span watercourse crossings</u> There would be no effects on structure and substrate of the river bed as there would be no in channel works (e.g. piers or bank reinforcement) or alterations to the flow regime associated with the construction of clear span haul road watercourse crossings.
		As above	<u>Temporary construction culverted watercourse crossings</u> The culverted haul road watercourse crossings would present a localised alteration to structure and substrate of the river bed. This is as a result of the culvert introducing a short section of new physical modification that would be composed of hard/resistant material. In most circumstances this will replace the existing bed material, which may range from gravels / cobbles for more natural watercourses to fine grained / silty beds on man-made drainage ditches. Considering the scale of any effects in the context of WFD water body size, the entire estimated culverted length across the water environment Study Area is only approximately 0.5% of the length of the mapped length of principal WFD watercourse), there is a high degree of confidence that the effects of these localised changes on structure and substrate of the river bed would not have any effect on WFD water body status. Furthermore, as all of the haul road watercourse crossings would be temporary (in place for approximately 3.5 years), any effects are likely to be fully reversible once they are removed following the construction phase.

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WFD element	WFD sub element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
			Effects on hydromorphology quality element: Based on the criteria set out in **Table 26-23** of **Chapter 26: Water environment, Volume 2** of the ES (Document Reference: 6.2.26) and considering the implementation of the embedded environmental measures, there would be a Negligible magnitude of change on structure and substrate of the river bed. There would be no need to provide mitigation to facilitate compliance with WFD for all phases of the Proposed Development.
Hydromorphological Supporting Elements	Connectivity with groundwater	None required None required C-17, C-182 Appropriate environmental permits and land drainage consents C-135 Appropriate standoff distances C-17, C-64, C-126, C-127, C-128, C-139, C-145, C-177, C-178, C-229, C-252. Appropriate haul road watercourse crossing design and implementation C-234, C-235, C-236, C-241, C-246, C-251. Appropriate (trenchless and trenched) cable watercourse crossing design and installation C-250, C-253 Pollution prevention and remediation	<u>Temporary construction haul roads</u> There would be no effects on the connectivity between the river and groundwater as there would be no in channel works. <u>Temporary construction clear-span watercourse crossings</u> There would be no effects on the connectivity between the river and groundwater as there would be no in channel works. <u>Temporary construction culverted watercourse crossings</u> Given the scale of the culverts under consideration (reasonable worst case of 10m in the downstream direction) and the fact that they would not extend sufficiently beyond the depth of the current bed level, there is a high degree of confidence that any localised disturbance of the connectivity between watercourses and the underlying groundwater bodies would be negligible. Considering the scale of any effects in the context of WFD water body size (both river and groundwater), there is a high degree of confidence that the effects of these localised changes on the connectivity with groundwater would not have any effect on WFD water body status. Furthermore, as all haul road watercourse crossings would be temporary (in place for approximately 3.5 years), any effects are likely to be fully reversible once they are removed following the construction phase. Effects on hydromorphology quality element: Based on the criteria set out in **Table 26-23** of **Chapter 26: Water environment, Volume 2** of the ES (Document

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WFD element	WFD sub element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
			Reference: 6.2.26) and considering the implementation of the embedded environmental measures, and considering the implementation of the embedded environmental measures, there would be a Negligible magnitude of change on connectivity with groundwater. There would be no need to provide additional mitigation to facilitate compliance with WFD for all phases of the Proposed Development.
Hydromorphological Supporting Elements	Structure of the riparian zone	C-21, C-135 Riparian vegetation protection and maintenance C-17, C-64, C-126, C-127, C-128, C-139, C-145, C-177, C-178, C-252. Appropriate haul road watercourse crossing design and implementation	<u>Temporary construction haul road clear-span watercourse crossings and culverted watercourse crossings</u> The culverted haul road watercourse crossings may result in local alterations to the type of riparian vegetation present on the channel margins such that the track or crossing can be built with sufficient space to accommodate the vehicles that would be used to transport materials to works locations. However, considering the size of the proposed tracks and crossings, it is likely that any localised removal of riparian vegetation would be negligible in relation to the length of the existing riparian corridor. Considering the scale and duration of any effects in the context of WFD water body size, there is a high degree of confidence that the effects of these localised changes on the structure of the riparian zone would not have any effect on WFD water body status. Furthermore, as each of the haul road watercourse crossings would be temporary (in place for approximately 3.5 years), any effects are likely to be fully reversible once they are removed following the construction phase. Effects on hydromorphology quality element: Based on the criteria set out in Table 26-23 of Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26) and considering the implementation of the embedded environmental measures, there would be a Negligible magnitude of change on the structure of the riparian zone. There would be no need to provide additional mitigation to facilitate compliance with WFD for all phases of the Proposed Development.

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WFD element	WFD sub element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
Physico-chemical quality elements **Chemical quality elements**	Ammonia (Phys-Chem) Phosphate Dissolved oxygen Temperature Specific Pollutants, Priority substances and Priority Hazardous substances	C-17, C-182 Appropriate environmental permits and land drainage consents C-135 Appropriate standoff distances C-119, C-120, C-175 Appropriate haul road design and installation C-17, C-64, C-126, C-127, C-128, C-139, C-145, C-177, C-178, C-252 Appropriate haul road watercourse crossing design and implementation C-234, C-236, C-241, C-246, C-251. Appropriate (trenchless and trenched) cable watercourse crossing design and installation C-77, C-141, C-142 Management of dewatered groundwater, and Environmental Permit for Discharge Activity C-130, C-131, C-133, C-135 Appropriate standoff distances and methodologies for topsoil stockpiling C-69, C-143 Materials Management Plan and Unexpected Contamination Protocol C-8, C-76, C-129, C-149, C-151, C-167, C-250, C-253 Pollution prevention and remediation	Temporary construction haul road clear-span watercourse crossings and culverted watercourse crossing Small indirect effects on the existing baseline water quality could occur via the disturbance of contaminated sediments within the channel and/or on the river banks at the location of culvert or clear span installation or the disturbance of contaminated surface sediments where access tracks are constructed on the floodplain and/or close to watercourses. This risk is greatest in respect of culvert watercourse crossings where a short term 'pulse' of contaminated water quality could propagate downstream once the flow is reconnected following culvert completion, although it could also occur as a result of soil stockpiling for access track construction adjacent to watercourses. However, considering the implementation of embedded environmental measures, and the scale of any effects in the context of WFD water body size (as presented above, the estimated culverted length across the water environment Study Area is only approximately 0.6% of the length of the mapped length of principal WFD watercourse), there is a high degree of confidence that the effects of these localised and short duration changes on water quality would not have any effect on WFD water body status. Direct effects, specifically on WFD chemical status, could be with accidental spillage or leakage of Polycyclic Aromatic Hydrocarbons (PAHs) associated with vehicle / machinery fuels and oils, or metals (from machinery itself) at or adjacent to the location of culvert or clear span bridge installation. Whilst the embedded environmental measures are expected to manage the occurrence of such effects as far as practicable, small residual effects (e.g. slow / gradual leaks directly into or adjacent to the watercourse) cannot be discounted. However, considering the implementation of embedded environmental measures, and the scale of any effects in the context of WFD water body size, there is a high degree of confidence that the effects of these localised and short duration changes on water quality would not have any effect on WFD water body status.

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WFD element	WFD sub element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
			Effects on identified Physico-chemical and Chemical quality elements: Based on the criteria set out in Table 26-23 of Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26) and considering the implementation of the embedded environmental measures, there would be a Negligible magnitude of change associated with haul roads and their watercourse crossings. There would be no need to provide additional mitigation to facilitate compliance with WFD for all phases of the Proposed Development.
Biological quality elements	Fish, Macrophytes and phytobenthos, and invertebrates	C-17, C-64, C-126, C-127, C-128, C-139, C-145, C-177, C-178, C-229, C-252. Appropriate haul road watercourse crossing design and implementation C-8, C-76, C-129, C-149, C-151, C-167 Pollution prevention and remediation C-69, C-143 Materials Management Plan and Unexpected Contamination Protocol C- 64, C-205, C-210, C229 Aquatic ecological protection	<u>Temporary construction haul road clear-span watercourse crossings and culverted watercourse crossings</u> Effects on biological quality elements are almost exclusively associated with changes to the hydromorphology and/or water quality of a watercourse that collectively make up the habitat upon which fish, macrophytes / phytobenthos and invertebrates are dependent. The main potential effect would be specifically related to the mobilisation of sediments from clear span watercourse crossings and watercourse crossings. This could result in a short-term pulse of sediments downstream, which could in turn cause a temporary change to the habitats of fish, macrophytes and phytobenthos, and invertebrates. Site specific terrestrial ecology watercourse crossing surveys have been carried out as part of the terrestrial ecology assessment (as outlined in Chapter 22: Terrestrial ecology and nature conservation, Volume 2 of the ES (Document Reference: 6.2.22) and Appendix 22.6: Fisheries habitat survey report, Volume 4 of the ES (Document Reference: 6.4.22.6)). This identified that there was only one temporary construction haul road crossing currently in favourable condition for fish habitation. As noted in Table C-1 above, a specific trenchless crossing has been proposed at this crossing near Water Lane, Buncton (TC-19) as part of the Proposed Development. This removes the need for a temporary construction haul road crossing and any associated sources of sediment. In addition, a protocol for good practices in relation to aquatic ecological protection has also been developed and

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WFD element	WFD sub element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26))	Assessment of effects on WFD
			incorporated into a suite of embedded environmental measures (e.g. C-64, C-229). Considering the successful implementation of embedded environmental measures and the scale and duration of any effects in the context of WFD water body size, there is a high degree of confidence that the effects of these localised and short duration changes on biological quality elements would not have any effect on WFD water body status. Effects on identified on Biological quality elements: Based on the criteria set out in Table 22-20 of Chapter 22: Terrestrial ecology and nature conservation, Volume 2 of the ES (Document Reference: 6.2.22), and considering the implementation of the embedded environmental measures, there would be a Very Low magnitude of change associated with temporary construction haul road watercourse crossings. As such there would be no need to provide additional mitigation to facilitate compliance with WFD for all phases of the Proposed Development.
TRANSITIONAL AND COASTAL BODIES (Arun and Adur transitional water bodies and Sussex coastal water body) Each of the temporary construction activities, associated potential effects and embedded environmental measures presented above are of relevance to onshore construction activities proposed within the catchment of the Arun and Adur transitional water bodies. The trenchless crossings of the Arun and trenched crossings of unnamed unreportable ditch channels of the Adur are of most relevance. The conclusions of the assessment of effects on WFD elements and sub elements are applicable to these transitional water bodies. Therefore, considering the implementation of the embedded environmental measures each potential effect is not likely to have a significant effect on these water bodies status' and there would be no need to provide additional mitigation to facilitate compliance with WFD for all phases of the Proposed Development. It is assumed that the implementation of the embedded environmental measures associated with these activities will provide a sufficient level of protection for the Sussex coastal water body. Any residual effects would be minimal given the distance from the coastal water body as well as the considerable dilution associated with the pathway of the effects to this receptor. There would be no effects on the WFD status of any of the transitional and coastal water bodies in the water environment Study Area as a result of temporary construction haul road works and their associated watercourse crossings.			
GROUNDWATER BODIES – None screened in for this activity (due to shallow nature of works)			

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Table C-22 Further impact assessment for onshore temporary construction compounds and the new onshore substation at Oakendene

WFD element	WFD sub element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26)	Assessment of effects on WFD
RIVER WATER BODY (Ryebank Rife, Black Ditch (W Sussex), Honeybridge Stream, Adur (Lockbridge), Adur East, Cowfold Stream)			
Hydromorphological Supporting Elements	All sub-elements, and specifically structure and substrate of the river bed	C-121, C-140 Effective drainage so as to not increase baseline runoff rates C-130, C-131, C-133, C-135 Appropriate standoff distances and methodologies for topsoil stockpiling C-27, C-73, C-120, C-129 Good construction practices for compounds including drainage strategy C-8, C-76, C-129, C-149, C-151, C-167 Pollution prevention and remediation C-120, C-129 Works areas constructed from semi – permeable aggregate where possible C-28 Land drainage management	There would be no direct effects on hydromorphology as there would be no in channel works or alterations to the flow regime. However, the initial ground works associated with these infrastructure types would result in the short-term exposure and disturbance of sediment. This is expected to be managed by the implementation of embedded environmental measures such that the levels of fine-grained sediment delivered to adjacent watercourses would be minimised as far as practicable. However, there may be a very minor, short-duration and localised change in structure and substrate of the river bed associated with delivery of fine-grained sediment that is elevated relative to baseline levels. Furthermore, any indirect effects on river flow regime would be managed via measures to ensure infiltration of any locally displaced runoff. Effects on hydromorphology quality elements: Based on the criteria set out in Table 26-23 of Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26) and considering the implementation of the embedded environmental measures, there would be a Negligible magnitude of change on structure and substrate of the river bed. There would be no need to provide mitigation to facilitate compliance with WFD for all phases of the Proposed Development.
Physico-chemical quality elements **Chemical quality elements**	Ammonia (Phys-Chem) Phosphate Dissolved oxygen Temperature Specific Pollutants, Priority substances and Priority Hazardous substances	C-130, C-131, C-133, C-135 Appropriate standoff distances and methodologies for topsoil stockpiling C-27, C-73, C-120, C-129 Good construction practices for compounds including drainage strategy C-8, C-76, C-129, C-149, C-151, C-167, C-250, C-253 Pollution prevention and remediation	Temporary construction compounds and the onshore substation site that are scoped in for further assessment are those located within Flood Zone 3 or within 25m from any watercourse. The objective of these scoping thresholds is to ensure that effects on water quality associated with the activities at these areas are fully accounted for. Effects during construction would principally be associated with activities that would involve the disturbance of sediments that have a pathway to the adjacent watercourse via runoff. This would particularly be associated with high rainfall periods or during a flood but is expected to be fully managed by the implementation of embedded environmental measures.

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WFD element	WFD sub element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26)	Assessment of effects on WFD
		C-120, C-129 Works areas constructed from semi – permeable aggregate where possible	Furthermore, effects, specifically on WFD chemical status, could be associated with accidental spillage or leakage of Polycyclic Aromatic Hydrocarbons (PAHs) associated with vehicle / machinery fuels and oils, or metals (from machinery itself) that could have a pathway to an adjacent watercourse. The same effects could be associated with the disturbance and mobilisation of contaminated sediment that forms part of the baseline conditions. Whilst the implementation of embedded environmental measures are expected to manage the occurrence of such effects as far as practicable, small residual effects (e.g. slow/gradual leaks) cannot be discounted. However, considering the implementation of embedded environmental measures, and the scale and duration of any effects in the context of WFD water body size, there is a high degree of confidence that the effects of these localised and short duration changes on water quality would not have any effect on WFD water body status. Effects on identified Physico-chemical and Chemical quality elements: Based on the criteria set out in Table 26-23 of Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26) and considering the implementation of the embedded environmental measures, there would be a Negligible magnitude of change on the structure of the riparian zone. There would be no need to provide additional mitigation to facilitate compliance with WFD for all phases of the Proposed Development.
Biological quality elements	Fish, Macrophytes and phytobenthos, and invertebrates	None required	Effects on biological quality elements are almost exclusively associated with changes to the hydromorphology and /or water quality of a watercourse that collectively make up the habitat upon which fish, macrophytes / phytobenthos and invertebrates are dependent. Given that no effects on hydromorphology or water quality (physico-chemical and chemical) WFD element status have been identified as a result of temporary construction compounds and onshore substation works, it is logical to conclude that there would also be no effects on the WFD status of any biological quality elements.
TRANSITIONAL AND COASTAL BODIES (Arun and Adur transitional water bodies and Sussex coastal water body) Each of the temporary construction activities, potential effects and embedded environmental measures presented above are of relevance to onshore construction activities proposed within the catchment of the Arun and Adur transitional water bodies. The conclusions of the assessment of effects on WFD elements and sub elements are applicable to these transitional water bodies. Therefore, considering the implementation of the embedded environmental measures each potential effect is not likely to have a significant effect on these water bodies status' and there would be no need to provide additional mitigation to facilitate compliance with WFD for all phases of the Proposed Development. It is assumed that the implementation of embedded environmental measures associated with these activities will provide a sufficient level of protection for the Sussex coastal water body. Any residual effects would be very minimal given the distance from the coastal water body as well as the considerable dilution associated with the pathway of the effects to this receptor. There would be no effects on the WFD status of any of the transitional and coastal water bodies in the Study Area as a result of the temporary construction compounds and works associated with the installation of the new onshore substation.			
GROUNDWATER BODIES – None screened in for this activity (due to shallow nature of works)			

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Table C-32 Further impact assessment for proposed marine infrastructure activities

WFD element	WFD Sub-element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26)	Assessment of effects on WFD
Biology	Habitats	C-43 The subsea export cable ducts will be drilled underneath the beach using horizontal directional drill (HDD) techniques. C-45 Where possible, subsea cable burial will be the preferred option for cable protection. Cable burial will be informed by the cable burial risk assessment and detailed within the Cable Specification Plan.	**Temporary habitat loss** Offshore export cable installation may result in temporary habitat loss / disturbance of up to 0.13km^2 within the Sussex coastal water body during the construction phase. No direct interaction with the habitats, including the saltmarsh and subtidal kelp, from the installation of offshore infrastructure is anticipated within the Arun transitional water body. A characterisation of the benthic and subtidal habitats which may be directly or indirectly impacted by Rampion 2 is provided in Chapter 9: Benthic, subtidal and intertidal ecology, Volume 2 of the ES (Document Reference: 6.2.9). The benthic habitats that characterise the Rampion 2 Assessment Boundary are not geographically restricted to within the offshore part of the proposed DCO Order Limits and are typically widespread throughout the wider eastern English Channel region (as described in Chapter 9: Benthic, subtidal and intertidal ecology, Volume 2 of the ES (Document Reference: 6.2.9)), therefore the temporary habitat disturbance during construction activities would have an impact on a limited footprint only compared to the overall extent of these habitats. The sensitivity of all subtidal biotopes that have been predicted/identified to characterise the proposed DCO Order Limits have been assessed according to the detailed Marine Evidence based Sensitivity Assessment (MarESA) sensitivity assessments (as described in Chapter 9: Benthic, subtidal and intertidal ecology, Volume 2 of the ES (Document Reference: 6.2.9)). This assessment has determined that all biotopes have a ‘low’ to ‘medium’ sensitivity to a disturbance of this nature and an associated ‘medium’ to ‘high’ degree of tolerance to this impact. Comparable habitats are distributed within the wider region and eastern English Channel. Therefore, given the relatively small spatial scales for the total temporary habitat disturbance, this loss is not expected to undermine regional ecosystem function or diminish biodiversity. If a section of offshore cable became exposed or damaged it would require reburial and / or replacement. Reburial (or replacement) would be undertaken using similar techniques to those associated with offshore cable installation activities. The lengths of exposed offshore cable would be limited, the potential effects more localised and occur over a shorter duration than those encountered during the construction phase. This is supported by Department for Business Enterprise and Regulatory Reform (BERR) (2008) which noted that the impact of offshore cable reburial operations mainly relates to a localised and temporary re-suspension and subsequent settling of sediments (see Water Clarity below). Since the loss of habitats is temporary and recovery will occur, deterioration is predicted to be on a small scale and for a limited period of time. As such, there is not predicted to be a deterioration in the ecological status of this water body receptor. The Proposed Development is therefore considered to be compliant with WFD requirements and a deterioration in the status of the Sussex coastal or Arun transitional water bodies would not result. **Long-term or permanent habitat loss** The presence of cable protection measures at cable crossings and areas where cable burial is not possible will lead to a change from a sedimentary habitat to one characterised by hard

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WFD element	WFD Sub-element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26)	Assessment of effects on WFD
			substrate. This will be either long-term habitat loss (for the 30-year design life duration of Rampion 2) or a permanent change during operation and maintenance, and potentially beyond if cable protection remains in situ beyond decommissioning. Resulting habitat loss is assessed as being a potential minor adverse effect (due to the potential shift in the baseline condition), although it is noted that this also comprises potential beneficial effects, providing new habitats for different faunal assemblages to colonise, resulting in a potential increase in biodiversity and biomass. The maximum footprint for all cable protection in the offshore cable corridor is 61,000m^2. It should also be noted that no long-term habitat loss will occur in the intertidal area of the offshore cable corridor as cable protection will not be used in this area. As assessed in **Chapter 9: Benthic, subtidal and intertidal ecology, Volume 2** of the ES (Document Reference: 6.2.9), while the impact will be locally significant and comprise a long-term or permanent change in seabed habitat within the footprint of the cable protection, the footprint of the area affected is highly localised (i.e., direct footprint only).. As the habitats and characterising biotopes are not geographically restricted to the proposed DCO Order Limits and are generally widespread throughout the wider region. The loss of these habitats is assessed as minor and does not threaten the long-term viability of the benthic resource within the proposed DCO Order Limits (as described in **Chapter 9: Benthic, subtidal and intertidal ecology, Volume 2** of the ES (Document Reference: 6.2.9)). As such there is not predicted to be a deterioration in the ecological status of this water body receptor. The Proposed Development is therefore considered to be compliant with the WFD requirements and there would not be a deterioration in the status of the Sussex coastal or Arun transitional water bodies nor prevent these water bodies from achieving future WFD objectives.
Biology	Invasive non-native species (INNS)	C-95 The assessment will take into consideration the mitigation and control of invasive species measures that will be incorporated into an Outline Project Environmental Monitoring and Management Plan (PEMMP).	An assessment of the increased risk of introduction or spread of marine INNS due to presence of infrastructure and vessel movements associated with the Proposed Development is provided in **Chapter 9: Benthic, subtidal and intertidal ecology, Volume 2** of the ES (Document Reference: 6.2.9). There is a risk that introduction of hard substrate into a sedimentary habitat will enable the colonisation of by invasive / non-indigenous species that might otherwise not have had suitable habitat for colonisation, thereby enabling their spread. This along with the movement of vessels in and out of the offshore export cable corridor has the potential to impact upon benthic ecology and biodiversity locally and in the broader region. Colonisation in general may result in an overall increased biodiversity; however, it represents a change from the baseline that occurs in the area. Whether this is considered a positive or negative can be subjective, and both are possible. Positive effects could include an increase in abundance of commercially important invertebrate species, which would benefit commercial fisheries. Negative effects could include providing habitat that may allow the establishment of non-native species. Rock outcroppings are known to occur throughout the region; therefore, the introduction of hard substrate will not fundamentally change the type of available habitats available within the wider the Rampion 2 Assessment Boundary. The existing rocky outcrops may already act as a vector for the spread of INNS. Therefore, the addition of cable protection

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WFD element	WFD Sub-element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26)	Assessment of effects on WFD
			within the offshore export cable corridor is not considered to significantly increase the risk of INNS spread. There is a risk that through increased vessel movements during construction will contribute to the risk of introduction or spread of INNS through ballast water discharge. There will be up to 2,576 and 26,640 round trips to port during the construction phase and operation and maintenance phase respectively. However, the movement of commercial vessels is common throughout the region (Chapter 13: Shipping and navigation, Volume 2 of the ES (Document Reference: 6.2.13)) and this provides an existing and potentially more likely method of transport for INNS species (due to the higher variety of ports and passage routes). Embedded environmental measures which include an Outline Project Environmental Management Plan (PEMP) (Document Reference: 7.11), including a biosecurity plan (C-95 and C-107) will ensure that the risk of potential introduction and spread of INNS from increased vessel activity is minimised. As noted in Chapter 9: Benthic, subtidal and intertidal ecology, Volume 2 of the ES (Document Reference: 6.2.9), the region is not a pristine environment in terms of the absence of INNS. Therefore, taking into account the existing hard substrate within the water body, existing vessel movements and the proposed management of INNS, there is not predicted to be a deterioration in the status of the water body receptor in the Sussex or Arun water bodies, nor prevent these water bodies from achieving future WFD objectives.
Water Quality	Clarity	C-43 The subsea export cable ducts will be drilled underneath the beach using horizontal directional drilling (HDD) techniques. C-45 Where possible, subsea cable burial will be the preferred option for cable protection. Cable burial will be informed by the cable burial risk assessment and detailed within the Cable Specification Plan.	As presented in Chapter 6: Coastal processes, Volume 2 of the ES (Document Reference: 6.2.6), the potential extent, duration and concentration of suspended sediment plumes is assessed using a combination of the available evidence base and project specific spreadsheet based numerical models. The potential extent and thickness of sediment deposition is assessed using a combination of the available evidence base, and project specific spreadsheet based numerical models. This is assessed in terms of the magnitude of change, relative the normal range of natural occurrence and variability. Further details are provided in Appendix 6.1: Coastal processes technical report: Baseline description, Volume 4 of the ES (Document Reference: 6.4.6.1), Appendix 6.2: Coastal processes technical report: Impact Assessment, Volume 4 of the ES (Document Reference: 6.4.6.2) and Appendix 6.3: Coastal Processes Technical Report: Impact Assessment, Volume 4 of the ES (Document Reference: 6.4.6.3). Cable burial is the preferred option for cable protection. Cable burial will be informed by the cable burial risk assessment and detailed within the Cable Specification Plan (embedded environmental measure C-45). The potential effects of sediment release due to cable burial are typically localised to the immediate area of the cable installation activity, Jetting and mass flow excavation methods have the greatest potential to energetically fluidise and eject material from the trench into suspension. By contrast, the other offshore cable installation techniques (for example, ploughing or cutting) are expected to re-suspend a smaller amount of material into the water column.

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WFD element	WFD Sub-element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26)	Assessment of effects on WFD
			The main findings of the assessment of cable burial can be summarised as follows: 1 Medium to coarse sand and gravels are likely to result in a temporally and spatially limited plume affecting suspended sediment concentration (SSC) levels (and settling out of suspension) in close proximity to the point of release. SSC will be locally elevated within the plume close to active cable burial up to tens or hundreds of thousands of milligrams per litre (mg/l). However, the change will only be localised and present for a very short time, in the order of seconds to tens of seconds for sand or gravel, before the material resettles to the seabed. Depending on the height at which material is ejected and the current speed at the time of release, changes in SSC and deposition will be spatially limited to within metres (up to 20m) downstream of the cable for gravels and within tens of metres (up to a few hundred metres) for sands; 2 Finer material will be advected away from the release location by the prevailing tidal current. High initial concentrations (similar to sands and gravels) are to be expected but will be subject to rapid dispersion, both laterally and vertically, to near-background levels (tens of mg/l) within hundreds to a few thousands of metres of the point of release within two to three days. In practice, only a small proportion of the material disturbed is expected to be fine, with a corresponding reduction in the expected levels of SSC; and 3 Irrespective of sediment type, the volumes of sediment being displaced and deposited locally are relatively limited (up to 3m³ per metre of cable burial) which also limits the combinations of sediment deposition thickness and extent that might realistically occur. Fundamentally, the maximum distance from each metre of cable trench over which 3m³ of sediment can be spread to an average thickness of (for example) 0.05m is 60m (or to 0.15m is 20m); any larger distance would correspond to a smaller average thickness. The assessment suggests that the extent and so the area of deposition will normally be much smaller for sands and gravels (although leading to a greater average thickness of deposition in the order of tens of centimetres, up to around one metre) and that fine material will be distributed much more widely, becoming so dispersed that it is unlikely to settle in measurable thickness locally. Based on this evidence, sediment plumes associated with offshore cable burial and seabed preparation are expected to quickly dissipate after cessation of the activities (within hours), due to settling and wider dispersion with the concentrations reducing quickly over time to background levels (two to three days). Noticeable but brief changes in suspended sediment concentration will occur during seabed preparation and offshore cable installation (or reburial) within the near-field and the adjacent areas of the far-field (wider areas subject to indirect impacts). When bentonite is released into the water column owing to its fine nature (clay) it will be advected away from the release location by the prevailing tidal current. High initial concentrations are to be expected but will be subject to dispersion, both laterally and vertically, to near-background levels (tens of mg/l) within hundreds to a few thousand metres of the point of release. Bentonite concentrations will become diluted to very low concentrations (<5mg/l, indistinguishable from natural background levels and variability) within approximately 24 hours. The material will be dispersed widely within the surrounding region and will not settle with measurable thickness.

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WFD element	WFD Sub-element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26)	Assessment of effects on WFD
			Given the temporary nature of the works, the Proposed Development is considered to be compliant with the WFD requirements and there would not be a deterioration in the status of the Sussex coastal or Arun transitional water bodies.
Water Quality	Chemical Status	N/A	Project specific modelling was undertaken for suspended sediment concentrations, however, sediment suspension values resulting from cable burial were taken from the extensive evidence base available. These values are presented in **Section 2** of **Appendix 6.3: Coastal Processes Technical Report: Impact Assessment, Volume 4** of the ES (Document Reference: 6.4.6.3). A worst-case sediment suspension value was adapted from several previous offshore wind projects utilising similar cable technology and installation techniques. The value applied was typically very high (20 mg/l) and represents a precautionary worst-case. Use of a worst-case scenario value meant the calculations were considered conservative, and real impacts would likely be much lower. Plumes will be short-lived, so it is highly unlikely that the proposed works would be in breach of the WFD water body's Annual Average (AA) concentration for the EQSD contaminants concerned. Contaminant concentrations (dissolved) in the water column were collated from various Environment Agency monitoring points in the vicinity of the Proposed Development and Sussex coastal water body. The monitoring points chosen, using the Environment Agency's Water Quality Archive (online resource), were Bognor (SO-F0001923), Littlehampton (SO-F0001910), Worthing Coastal (SO-F0001898), and Shoreham Coastal (SO-F0017303). These points were chosen due to their position relative to the export cable corridor and landfall, and thus provided data specific to the Proposed Development. It is recognised that the monitoring points have been closed by the Environment Agency, with no further data collected in the last 10 years; however, it was considered appropriate to use this data to support baseline characterisation of water quality. Data comprised measurements of six metals, cadmium, chromium, copper, nickel, lead, and zinc (with no cadmium data from the Worthing Coastal Monitoring Point). This data was analysed in conjunction with project-specific sediment contamination survey data to determine potential impact Environmental Quality Standards (EQS) for water quality are determined based on the dissolved concentration. Under normal circumstances, a very small proportion of contaminants will partition from the sediment-bound to the dissolved phase in the water column when in suspension. Partition coefficients for each contaminant can be used to estimate the concentrations entering into the dissolved phase, which is typically several orders of magnitude smaller. It is considered unlikely that the proposed works will result in an exceedance of the Maximum Allowable Concentration (MAC) EQSD's for the contaminant concerned, resulting from sediment plumes. The concentration of contaminant partitioning is presented in Table C-5 of Annex C. Partition coefficients used have been identified as 'worse-case' examples from APEM's SeDiChem tool library. All transitional and coastal water bodies in England are currently failing for chemical status, which is relevant when considering the potential additional impacts of the proposed works. Calculations shown in Table C-5 indicate the Proposed Development is unlikely to jeopardise the recovery potential of the water body, due to the negligible effects and impacts will be negligible. The short-term nature of the works and associated sediment plumes would indicate

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WFD element	WFD Sub-element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26)	Assessment of effects on WFD
			any uplift in water concentrations of EQSD contaminants would be expected to return to background levels quickly (within hours). Considering the temporary nature of the works, chemical status of the water body would remain unchanged as a result of the Proposed Development. The Proposed Development is considered to be WFD compliant and would not result in a deterioration of the water body status, nor prevent these water bodies from achieving future WFD objectives. It is noted that the Sussex coastal water body is currently failing with regards to mercury and its compounds, and Polybrominated diphenyl ethers (PBDEs). While the above described assessed has not incorporated these contaminants due to a lack of available information on background concentrations, it is considered likely that these contaminants would present similar small-scale uplift in the event of sediment disturbance, and thus not leading to a significant 'fail worse' scenario. Furthermore, mercury concentrations in sediment samples collected from within the proposed DCO Order Limits were consistently below Centre for Environment, Fisheries and Aquaculture Science (Cefas) Action Level 1, suggesting concentrations are relatively low and it is unlikely that any disturbance associated with the Proposed Development will result in a material impact to water quality at the Sussex coastal water body scale.
Water Quality	Microbiology	N/A	As detailed above, the proposed offshore activities have the potential to increase SSC in the marine environment through the generation of sediment plumes. Increases in SSC and turbidity may result in a decrease in the depth to which natural light can penetrate into the water column. This in turn may result in increased bacterial growth. The mortality of bacteria, including *E.coli* and intestinal enterococci, within the water column is strongly influenced by the amount of ultraviolet (UV) light penetrating the water column. Under higher UV scenarios the mortality of bacterium is higher. Therefore, the reduced water clarity resulting from the activities associated with the Proposed Development and the release of sediments into suspension, could potentially result in temporary increases in bacterial counts within the water column. If these elevated counts were present within Littlehampton or Middleton-on-Sea Bathing Waters during the designated bathing season, this could theoretically cause a deterioration in their performance classification (**Table A-3** of **Annex A**). Though it should be noted that the mortality rates within the sediment are greater than those within the water column. Given the predicted dilution levels, the temporary nature of the activities, and expected transport and dispersion of SSC and bacteria by tidal currents it is expected that any bacterial increases in the water column would be of limited duration (in the order of days, i.e., as long as the plumes persisted). Following the sediment plumes dispersion, and subsequent increases in UV light, the bacterial counts in the water column will return to baseline levels. The resultant decrease in water clarity would be analogous to that experienced during storm events, and the potential resultant changes in microbiology would be within the expected range of natural variation in the Rampion 2 Assessment Boundary during high energy low frequency events. Current and historical performance of the Bathing Waters (**Table A-3** of **Annex A**) indicates that the levels of bacteria within localised sediments in close proximity do not result in a reduction in water quality when mobilised during storm events. This suggests that bacterial concentrations are not elevated in seabed sediments in the vicinity of the Bathing Waters or the offshore export cable corridor. This is supported by analysis of Bathing Water Profiles for
Protected Areas	Bathing waters: Middleton-on-Sea and Littlehampton	N/A	

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WFD element	WFD Sub-element	Embedded environmental measures (C) and their subjects of particular relevance (described further in Chapter 26: Water environment, Volume 2 of the ES (Document Reference: 6.2.26)	Assessment of effects on WFD
			Middleton-on-Sea and Littlehampton which identified no continuous sources of wastewater. However, it is noted that there were two storm overflows locations and natural drainage from the Arun catchment may impact Littlehampton. Both Bathing Water Profiles indicated one surface water outfall location for the respective Bathing Waters. Given the short-term nature of the potential effect and the fact that anticipated increases in bacteria are considered to be negligible in terms of Bathing Water compliance, no deterioration or non-compliances at the two identified Bathing Waters are anticipated to occur as a result of the proposed construction activities, as such no additional mitigation measures are considered necessary.
Protected Areas	Solent and Dorset Coast SPA	N/A	The identified protected area (Solent and Dorset Coast Special Protection Area (SPA)) has been subjected to a Habitats Regulation Assessment (HRA) process. The Report to Inform Appropriate Assessment applied the conclusions on the potential for a Likely Significant Effect (LSE), as drawn in the Screening Report (**Table A-4** of **Annex A**), with respect to the conservation objectives of the screened in European sites, to determine the potential for an Adverse Effect on Integrity (AEoI). No potential for AEoI has been identified for the Solent and Dorset Coast SPA of relevance to this WFD assessment (**Table A-5** of **Annex C**). Further details are provided in **Report to Inform Appropriate Assessment** (Document Reference: 5.9).

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Table C-33 Impacts of the proposed works on the chemical water quality and status of the Sussex coastal water body

Contaminant	SSC Uplift (mg/l)	Maximum Contaminant Concentration in Sediment Samples (mg/kg)	Contaminant Concentration in Suspended Sediment (mg/l)	Maximum Concentration of Contaminant Released (mg/l)	Maximum Concentration of Contaminant Released (µg/l)	Partition Coefficient (l/kg)	Maximum Concentration Dissolved Contaminant Released (Uplift) (µg/l)	Contaminant Concentration in Water (Monitored Data) (µg/l)	Project + Backgrounds (worst case)	% Change of Backgrounds	Long-Term Mean (µg/l)	MAC (µg/l)	Change in Status?
Cadmium (Cd)	200	0.2	0.0000002	0.00004	0.04	100	0.0004	0.09575	0.09615	0.418%	0.2	N/A	No change
Chromium (Cr)	200	32.3	0.0000323	0.00646	6.46	79	0.08177	0.40802	0.48980	20.04%	N/A	32	No change
Copper (Cu)	200	13.3	0.0000133	0.00266	2.66	3162	0.00084	1.40078	1.40163	0.060%	3.76	N/A	No change
Lead (Pb)	200	15.1	0.0000151	0.00302	3.02	35481	0.000085	1.09191	1.09199	0.008%	N/A	14	No change
Nickel (Ni)	200	14.9	0.0000149	0.00298	2.98	500	0.00596	0.16936	0.17532	3.519%	N/A	34	No change
Zinc (Zn)	200	34.7	0.0000347	0.00694	6.94	12589	0.00055	6.69238	6.69293	0.008%	7.9	N/A	No change

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Table C-34 Conclusions of the RIAA Natura 2000 sites within 2km of the offshore cable corridor

Designated Site	Relevant Features	Conclusion of Adverse Effects on Integrity (AEoI)		
		Construction phase	Operation and maintenance phase	Decommissioning phase
Solent and Dorset Coast SPA	Common tern	Direct disturbance and displacement – no AEoI In-combination effects - no AEoI	Collision risk – no AEoI In-combination effects – no AEoI	Direct disturbance and displacement - no AEoI In-combination effects - no AEoI
	Sandwich tern	Direct disturbance and displacement – no AEoI In-combination effects – no AEoI	Collision risk – no AEoI Direct disturbance and displacement – no AEoI In-combination effects – no AEoI	Direct disturbance and displacement – no AEoI In-combination effects – no AEoI
	Little tern	Direct disturbance and displacement – no AEoI In-combination effects – no AEoI	Collision risk – no AEoI In-combination effects – no AEoI	Direct disturbance and displacement – no AEoI In-combination effects – no AEoI

Table C-35 List of embedded environmental measures with reference to the further assessment tables (also presented in the Commitments Register (Document Reference: 7.22))

ID	Environmental measure proposed	Subject of key environmental measures specifically referenced in assessment Tables C-1 to C-3
C-1	The onshore cable route will be completely buried underground for its entire length where practicable.	
C-5	Main rivers, watercourses, railways and roads that form part of the Strategic Highways Network will be crossed by horizontal directional drill (HDD) or other trenchless technology where this represents the best environment solution and is financially and technically feasible (see C-17).	Appropriate (trenchless and trenched) cable watercourse crossing design and installation
C-6	Where practical, sensitive sites will be avoided by the temporary and permanent onshore project footprint including SSSIs, Local Nature Reserves, Local Wildlife Sites, Ancient Woodland, areas of consented development, areas of historic and authorised landfills and other known areas of potential contamination, National Trust Land, Listed Buildings, Scheduled monuments, and mineral resources (including existing mineral sites, minerals sites allocated in development plans and mineral safeguarding areas).	
C-7	Post construction, the work area will be reinstated to pre-existing conditions as far as reasonably practical in line with the Materials Management Plan (MMP) (C-69) and Defra 2009 Code of Construction Practice for the Sustainable Use of Soils on Construction Sites PB13298.	

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ID	Environmental measure proposed	Subject of key environmental measures specifically referenced in assessment Tables C-1 to C-3
C-8	During both construction and operation, vehicle maintenance and refuelling of machinery will be undertaken within designated areas where spillages can be easily contained, and machinery will be routinely checked to ensure it is in good working condition. These areas at risk of spillage or containing hazardous materials, such as vehicle maintenance areas and hazardous substance stores (including fuel, oils and chemicals) will comply with industry good practice, be bunded, have appropriate containment and segregation and will be risk assessed and carefully sited to minimise the risk of hazardous substances entering the drainage system, or the local watercourses or sensitive land based receptors. Such areas will be sited at least 10m from a watercourse and away from areas at risk of flooding. Additionally, the bunded areas will have impermeable bases to limit the potential for migration of contaminants into groundwater following any leakage / spillage.	Pollution prevention and remediation
C-9	Joint bays will be completely buried, with the land above reinstated to pre-construction ground level, with the exception of link box chambers where access will be required from ground level (via manholes). Once constructed joint bays and link box chambers will be resilient to flooding.	
C-10	No blasting is anticipated to be required and trenchless crossings will be undertaken by non-impact methods.	
C-11	During construction topsoil and subsoil will be stored within the temporary working corridor of the onshore cable. The topsoil and subsoil will be stored in separate stockpiles in line with Defra 2009 Construction Code of Practice for the Sustainable Use of Soils on Construction Sites PB13298, including guidance on utilising separate stockpiles and giving due consideration to adverse weather conditions. Any suspected or confirmed contaminated soils will be separated, contained and tested before removed.	
C-13	In areas (or during periods of adverse weather) there may be the requirement to import aggregates to create a stable surface for construction traffic movements. Options such as bog-matting and geotextiles will be considered by the principal contractor for sensitive sections of the route to reduce impact. Selection of an appropriate measure to lower the risk of ground compaction will be made by a suitably trained / experienced person.	
C-17	Where trenchless techniques are not required or are not practical, watercourses may be crossed by open cut techniques (with flows overpumped around the working area). Appropriate environmental permits or land drainage consents will be applied for works from the Environment Agency (e.g. for Main Rivers, works on or near sea defences/flood defence structures or in a flood plain) or from the Lead Local Flood Authority (LLFA) (for Ordinary Watercourse crossings) (see C-5).	Appropriate (trenchless and trenched) cable watercourse crossing design and installation Appropriate haul road watercourse crossing design and implementation Appropriate environmental permits and land drainage consents
C-18	A crossing schedule will be prepared which includes crossing methodology for each crossing of road, rail, Public Rights of Way (PRoW) and watercourse	Appropriate (trenchless and trenched) cable watercourse crossing design and installation; Appropriate haul road watercourse crossing design and implementation
C-19	The onshore cable will be constructed in discrete sections. The trenches will be excavated, the cable ducts will be laid, the trenches backfilled and the reinstatement process commenced in as short a timeframe as practicable. At regular intervals (typically 600m – 1,000m) along the route joint bays / pits will be installed to enable the cable installation and connection process.	Appropriate (trenchless and trenched) cable watercourse crossing design and installation; Good construction practices for trenching

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ID	Environmental measure proposed	Subject of key environmental measures specifically referenced in assessment Tables C-1 to C-3
C-20	The typical construction working area will be 40m along the onshore construction corridor to minimise the construction footprint. At other discrete locations this may be expanded to accommodate the working area for example for Horizontal Directional Drilling (HDD).	
C-21	Where vegetation removal is necessary, it will be scheduled over winter to avoid the bird breeding season. If not possible for all areas, any vegetation removal will be undertaken in line with British Standard (BS) 5837:2012 (Trees in relation to design, demolition and construction). This will be carried out under supervision and will be appropriately managed to remove the risk of damaging or destroying active nests, young or eggs. Suitable methods will also be used to ensure vegetation supporting other legally protected species is removed sensitively and in a legally compliant way.	Riparian vegetation protection and maintenance
C-25	All aspects of the construction work will be in accordance with the Construction (Design and Management) Regulations 2015.	
C-27	Following construction, construction compounds will be returned to previous conditions as far as reasonably possible.	Good construction practices for temporary construction compounds including drainage strategy
C-28	Particular care will be taken to ensure that the existing land drainage regime is not compromised as a result of construction. A specialist drainage contractor / consultant will be engaged prior to construction to develop the pre- and post-construction drainage plan on agricultural land. Land drainage systems will be maintained during construction and reinstated on completion. Temporary cut-off drains will be installed parallel to the trench-line before the start of construction to intercept soil and groundwater before it reaches the trench. These field drains will discharge to local drainage ditches through silt traps, as appropriate, to minimise sediment release.	Land drainage management
C-29	A depth of cover of 1.2m is assumed. Deeper trenches may be required at specific crossing locations (such as watercourses).	Good construction practices for trenching
C-30	Geotextiles or other membranes may be used to temporarily control and minimise erosion or transport of sediment from construction sites in areas that are considered unprotected.	
C-33	An Outline COCP will be adopted to minimise temporary disturbance to residential properties, recreational users and existing land users. It will provide details of measures to protect environmental receptors.	
C-43	The subsea export cable ducts will be drilled underneath the beach using horizontal directional drilling (HDD) techniques.	
C-45	Where possible, subsea cable burial will be the preferred option for cable protection. Cable burial will be informed by the cable burial risk assessment and detailed within the Cable Specification Plan.	
C-53	An Outline Marine Pollution Contingency Plan (MPCP) has been submitted with this Application as Appendix A of the Outline Project Environmental Management Plan (Application Document Reference 7.11). This Outline MPCP provides details of procedures to protect personnel working and to safeguard the marine environment and mitigation measures in the event of an accidental pollution event arising from offshore operations relating to Rampion 2. The Final MPCP will include relevant key emergency contact details.	

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ID	Environmental measure proposed	Subject of key environmental measures specifically referenced in assessment Tables C-1 to C-3
C-64	For temporary watercourse crossings the works will be designed to enable the free passage of fish and aquatic mammals including continuation of bed material through the culvert. During construction (e.g. placing culverts or installing ducts), sections of the channel will need to be isolated using barriers that span the whole width of the channel. These isolation works will be of short duration and are expected to be completed within 48 hours of the placement of barriers to flow. Screening will take place to prevent fish being drawn into the pump.	Appropriate haul road watercourse crossing design and implementation Aquatic ecological protection
C-69	Construction strategies will be implemented that will seek to maximise the reuse of excavated clean materials from the onshore cable construction corridor where practicable and feasible. Prior to construction, a Materials Management Plan (MMP) will be developed that outlines where excavated non-waste materials will be reused in line with the CL:AIRE (2011) Definition of Waste Code of Practice (DoWCoP). A declaration will be made to CL:AIRE by a Qualified Person that the MMP has been completed in accordance with the DoWCoP and that best practice is being followed.	Materials Management Plan
C-73	Drainage design to manage, attenuate and, if necessary, treat surface water run-off will be included in all elements of temporary and permanent infrastructure. These will be designed in accordance with Sustainable Drainage (SuDS) principles including allowances for climate change and discharged at pre-development rates. Where the development intersects overland flow pathways or areas of known surface water flooding appropriate measures will be embedded into the design.	Good construction practices for temporary construction compounds including drainage strategy
C-74	All sub-surface infrastructure will be designed to retain sub-surface flow pathways to avoid any localised increases in groundwater flooding.	
C-75	Construction and permanent development in flood plains will be avoided wherever possible. Where this is not possible, environmental measures will be developed to ensure the works are National Policy Statement compliant, including a sequential approach to siting of infrastructure and passing the Exception Test where appropriate.	
C-76	In line with good practice, Pollution Prevention Plans (PPPs) will be developed to detail how ground and surface waters will be protected in construction and operation. These will include information on the use and storage of any fuels, oils and other chemicals (in line with C-8 and C-167), measures for protecting licenced and private groundwater abstractions (in line with commitment C-147) and pollution incidence response planning.	Pollution prevention and remediation
C-77	Dewatering of excavations will be undertaken in line with good practise. Effects of dewatering on potential receptors will be incorporated into the proposed approaches for each piece of infrastructure. Appropriate treatment will be installed before discharge to surface or groundwater, this will include the use of siltbusters (or similar) before discharge to surface waters. Appropriate licences and permits will be applied for if required.	Management of dewatered groundwater, and Environmental Permit for Discharge Activity
C-78	Licensed and private water supplies will be avoided where practicable; if any impacts are anticipated then appropriate measures will be put in place to avoid impact on the quantity and quality of the supply.	
C - 95	The assessment has taken into consideration the mitigation and control of invasive species measures, this has been incorporated into the Outline Project Environmental Management Plan (PEMP) (Document Reference 7.11).	
C - 111	A decommissioning plan will be prepared for the project in line with the latest relevant available guidance.	

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ID	Environmental measure proposed	Subject of key environmental measures specifically referenced in assessment Tables C-1 to C-3
C-117	Works on areas identified as floodplain (Flood Zones 2 and 3) will be programmed to avoid the period between October and February inclusive to avoid disturbance of waterbird, and where possible, will be programmed to occur in late summer / early autumn, to avoid interaction with known flooding periods to minimise the potential for displacement of floodwater.	
C-118	Emergency Response Plans (ERPs) for flood events will be prepared for all construction activities, working areas, access and egress routes in floodplain areas (tidal and fluvial).	
C-119	In the fluvial floodplain, temporary trackway (rather than raised stone roads) will be utilised for the temporary haul road and access routes wherever practicable.	
C-120	Stone access routes / haul road and working areas will be constructed of semi-permeable aggregate material (similar to compounds as per C-129) where practical.	Works areas constructed from semi – permeable aggregate where possible Good construction practices for temporary construction compounds including drainage strategy
C-121	Run-off from access routes / haul road and working areas will be allowed to infiltrate wherever possible.	Effective drainage so as to not increase baseline runoff rates
C-122	All permanent onshore cable crossings will pass beneath the bed of watercourses (no within bank crossings). Sufficient depth between the bed of the watercourse and the top of the cable (whether trenchless or open cut) will be provided to ensure no potential for exposure of cable due to scour.	Appropriate (trenchless and trenched) cable watercourse crossing design and installation
C-123	Starter (and exit) pits for horizontal directional drilling (HDD) and other trenchless technologies will be micro-sited outside of the floodplain where possible (by moving the pits further away from watercourses).	Appropriate standoff distances from watercourses for trenchless pits
C-124	Where start and/or exit pits for horizontal directional drilling (HDD) and other trenchless technologies are located within in the floodplain the Contractor will develop procedures as part of the Emergency Response Plan (ERP) to be enacted.	
C-125	Where the cable route crosses an Environment Agency flood defence, trenchless methodologies will be used.	Appropriate (trenchless) cable watercourse crossing design and installation
C-126	Minor watercourses (where open cut techniques are proposed for the permanent cable crossings) will also have temporary crossings for the haul road to provide vehicular access along the route. A mixture of culverts and / or clear span bridges could be employed based on crossing specific requirements (size of watercourse and flood risk). These will be subject to permits and consents with the Environment Agency and Lead Local Flood Authority (LLFA).	Appropriate haul road watercourse crossing design and implementation
C-127	Temporary watercourse crossings will not be provided for the haul road where the cable crossing will be trenchless. Vehicular access will use existing public highways and bridges.	Appropriate haul road watercourse crossing design and implementation
C-128	Any temporary crossings will be in place for the minimal time possible.	Appropriate haul road watercourse crossing design and implementation
C-129	Temporary construction compounds will be surfaced with semi-permeable aggregate material (similar to access roads as per C-120) where practical, with the exception of fuel storage areas and similar where pollution	Works areas constructed from semi – permeable aggregate where possible

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ID	Environmental measure proposed	Subject of key environmental measures specifically referenced in assessment Tables C-1 to C-3
	containment in the event of a spillage is the priority. Areas of temporary construction compounds that are used for fuel storage, plant maintenance and refuelling will be surfaced with fully impermeable materials to prevent any infiltration of contaminated runoff and contain bunding in line with C-8 and C-167.	Good construction practices for temporary construction compounds including drainage strategy Pollution prevention and remediation
C-130	During construction, no soil stockpiles will be stored within 8m of Ordinary Watercourses, within 8m of a non-tidal Main River, and within 16m of a tidal Main River.	Appropriate standoff distances and methodologies for topsoil stockpiling
C-131	Where potential flood risk receptors could be impacted by a loss of floodplain storage and/or impacts on floodplain conveyance, the loss will be addressed through soil stockpiles (associated with both the cable construction and the temporary haul road) being located outside of the fluvial floodplain.	Appropriate standoff distances and methodologies for topsoil stockpiling
C-132	Soil stockpiles in the tidal floodplain will have regular gaps to prevent floodplain compartmentalisation. Soil stockpiles would have a maximum bund to gap ratio of 4:1. The worst case scenario continuous length of embankment would be up to 80m, i.e., with 20m gaps at 80m intervals.	
C-133	Stockpiles will be present for the shortest practicable timeframe, with stockpiles being reinstated as the construction work progresses in order to minimise areas of exposed soil and any associated silt laden run-off. Stockpiles which are anticipated remain present for six months will be seeded to encourage stabilisation.	Appropriate standoff distances and methodologies for topsoil stockpiling
C-134	During construction, dewatering activities (of excavations) will be halted if a flood alert or flood warning is in place downstream, in order to minimise any impacts on flood flow conveyance and to maintain access for watercourse maintenance.	
C-135	A standoff distance (distance to be determined based on biodiversity and pollution control considerations) will be applied from watercourse bank tops (other than for watercourse crossings) to account for potential issues such as water vole burrows, otter holts and pollution control.	Appropriate standoff distances and methodologies for topsoil stockpiling Riparian vegetation protection and maintenance
C-137	All proposed onshore infrastructure and construction activities will be sited outside of the inner Source Protection Zone 1 (SPZ1) for the Southern Water public water supplies. The only exceptions to this will be for light 4 X 4 construction access route which crosses part of Warningcamp SPZ1 and the installation of several minor passing places within the Patching SPZ1. Access routes will utilise existing tracks, roads, farm entrances etc as far as practicable, and where necessary no-dig solutions (e.g. aluminium trackway) and other site specific measures (e.g. C-250 and C-251) would also be utilised. There will be no storage of hazardous materials including chemicals, oils and fuels within any SPZ.	
C-138	Details of the proposed trenchless watercourse crossing techniques will be discussed with the Environment Agency at the detailed design stage. The depth of the trenchless crossing will be such that the riverbed and watercourse is undisturbed by construction activities. Specific construction method statements will be prepared.	Appropriate (trenchless) cable watercourse crossing design and installation
C-139	Culverting activities and onshore construction of cable circuit crossings will take place during periods of normal to low flow conditions to avoid conveyance-related flood risk effects.	Appropriate (trenched) cable watercourse crossing design and installation Appropriate haul road watercourse crossing design and implementation

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ID	Environmental measure proposed	Subject of key environmental measures specifically referenced in assessment Tables C-1 to C-3
C-140	Temporary cut-off drains will be installed to prevent surface water and shallow groundwater ingress into excavations. Intercepted water will be encouraged to infiltrate into the ground, mimicking natural flow patterns in accordance with the principles of SuDS. Where discharge of cut-off drains to watercourses is the only practical option, appropriate measures will be employed to moderate runoff rates, and promote settlement of suspended sediment.	Effective drainage so as to not increase baseline runoff rates
C-141	Dewatering of trench excavations will be carefully monitored and groundwater flow disruption and drawdown will be reduced via construction good practices. The time any excavation is open will be kept to a minimum to minimise ingress of water and dewatering requirements.	Management of dewatered groundwater, and Environmental Permit for Discharge Activity Good construction practices for trenching
C-142	If water being pumped from excavations is suspected to be contaminated, appropriate measures will be taken in accordance with the Environment Agency guidance and the Environmental Permitting Regulations to prevent uncontrolled or unauthorised releases of this water to ground or to the water environment.	Management of dewatered groundwater, and Environmental Permit for Discharge Activity
C-143	Any temporary onsite storage of excavated materials suspected or confirmed to be contaminated will be on impermeable sheeting, covered over and with adequate leachate / runoff drainage to prevent migration of contaminants from the stockpile. Materials will be segregated where possible to prevent cross-contamination occurring. Such materials will only be reused if they are confirmed as suitable for use in line with the requirements of the Materials Management Plan (C-69).	Materials Management Plan and Unexpected Contamination Protocol
C-144	In areas where there are groundwater seepages / flush zones identified along the access tracks at the detailed design stage, the Contractor will utilise geotextiles beneath the track material or bogmat where necessary to prevent the track from settling into the ground to help maintain sub-surface flow.	
C-145	To enable access during construction, temporary clear span bridges will be used for those temporary watercourse crossings too wide or deep to be crossed using culverts.	Appropriate haul road watercourse crossing design and implementation
C-146	The location of statutory undertaker assets (including water supply and sewer pipes, water and waste treatment works etc.) will be confirmed through inspection of detailed plans from the undertakers. All assets potentially affected by the Proposed Development will be identified, with particular consideration to access roads and crossings.	
C-147	The Contractor will identify springs, abstractions and any sewerage infrastructure including treatment plants, septic tanks, soakaways, interconnecting pipes and outfalls, that require appropriate protection. These features will be mapped and appropriate exclusion zones will be applied to ensure that construction methods do not disturb the physical infrastructure layout. All appointed Contractor staff will be given training to protect abstractions deemed to be at risk. In the event that an abstraction is identified as being at risk of water quality deterioration, a comprehensive sampling programme will be agreed with the relevant authority for the abstraction in question. Furthermore, in the event that there is an impact on a water supply, an alternative supply will be made available.	
C-148	During construction, a programme of visual inspections will be undertaken to ensure that the potential effects on the River Arun and Adur tributaries are appropriately monitored. The visual inspection points will be selected downstream of construction areas. See C-151 for response plan in the event that observations identify that an intervention is necessary.	

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ID	Environmental measure proposed	Subject of key environmental measures specifically referenced in assessment Tables C-1 to C-3
C-149	In areas where there is a potential for hydrocarbon residues from run-off / isolated leakages, surface water drainage measures will be provided to capture hydrocarbons prior to discharge, such as hydrocarbon interceptors.	Pollution prevention and remediation
C-150	Plant and machinery used during the construction and operation phases will be maintained to minimise the risks of oils leaks or similar, in line with C-8. Placing a drip tray beneath a plant and machinery during refuelling and the availability of spill kits will contain small spillages.	
C-151	Contractors will be made aware of their statutory responsibility not to “cause or knowingly permit water pollution”. A Pollution Prevention Plan (PPP) and Pollution Incident Response Plan (PIRP) will be prepared for the Proposed Development, the latter in line with Pollution Prevention Guideline 21 (PPG 21, 2009), and all contractors will be briefed on these plans, with copies made available on site.	Pollution prevention and remediation
C-152	In the event that piling is selected for installation of the onshore substation foundations, a detailed piling risk assessment will be prepared This will be submitted to the Environment Agency for approval, prior to the commencement of construction.	
C-153	An Operations and Maintenance Plan will be developed prior to commissioning of the Proposed Development with a Pollution Incident Control Plan (PICP) for implementation during the operation and maintenance phase.	
C-154	Within the fluvial floodplain and at surface water flow pathways, the permanent cable will be completely buried, with the land above reinstated to pre-construction ground level (some mounding may be appropriate to allow for settlement).	Good construction practices for trenching
C-167	Any tanks and associated pipe work containing oils, fuels and chemicals will be double skinned and provided with leak detection equipment. There will be a bunded capacity of 100% of the maximum tank volume for non-hazardous fluids. For hazardous chemicals, fuels or oils bund capacity will be the larger of 110% of the largest tank volume for single tank bunds, (or, in the case of multi tank bunds, 110% of the largest tank capacity or 25% of the combined tank capacity, whichever it is the largest). Fuel storage will be in accordance with the Control of Pollution (Oil Storage) (England) regulations 2001 and other Pollution Prevention Guidelines (PPGs). All stores of fuel will be located at least 20m from any watercourses and away from areas at risk of flooding.	Pollution prevention and remediation
C-175	Where use of trackway is not possible and potential flood risk receptors could be impacted), access routes (and working areas) in the fluvial floodplain will be as close to ground level as possible to avoid impacting flood flow conveyance and loss of floodplain storage (a slight raised surface is often required to allow for drainage).	
C-176	For temporary watercourse crossings, where culverts are to be used, these will be appropriately sized to maintain existing flow conveyance. Where existing culverts already exist nearby, similarly sized culverts may be suitable.	
C-177	Where feasible multiple pipes will not be used for culverts of temporary watercourse crossings (culverts should have a single pipe/opening of an appropriate size for the watercourse cross section).	Appropriate haul road watercourse crossing design and implementation

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ID	Environmental measure proposed	Subject of key environmental measures specifically referenced in assessment Tables C-1 to C-3
C-178	Circular culverts for temporary watercourse crossings to have concrete bedding in locations where ground conditions suggest that settlement could occur, e.g. Internal Drainage Board (IDB) district.	Appropriate haul road watercourse crossing design and implementation
C-179	Stockpile gaps would be located at topographic low points to preserve existing flow paths.	
C-180	Where stockpiles are placed on both sides of the access routes/ haul road the gaps will coincide.	
C-181	Access roads will have cross drainage provided where necessary at topographic low points.	
C-182	Any works within 5m of any watercourse in the Internal Drainage Board (IDB) district will be subject to consent from the Environment Agency. Any works within 8m of a non-tidal Main River or 16m for a tidal Main River will be subject to consent from the Environment Agency (the majority of the Main Rivers are tidal for the majority of the cable route). Work within banktop of any other watercourse (not main river and outside of IDB) would require consent from the Lead Local Flood Authority (LLFA).	Appropriate environmental permits and land drainage consents
C-205	Any open cut watercourse crossing will be undertaken in-line with advice outlined within the fisheries mitigation table within the Outline Code of Construction Practice, C-17, C-64, C-122, C-126, C-138 and C-139 to reduce potential impact to fish within watercourses. C-139 and C-211 should be combined, ensuring low-flow rates coincide with reduced migratory fish risk.	Aquatic ecological protection
C-210	Pre-construction surveys for water vole and otter will take place at all watercourse crossings prior to construction. Should water vole or otter be present suitable mitigation, under licence from Natural England where necessary, will be delivered under supervision from the Ecological Clerk of Works.	Aquatic ecological protection
C-211	Pre-construction surveys of trees with bat roost potential that require removal or pruning will take place prior to works commencing. Trees and buildings in close proximity to the working area will also be surveyed where potential disturbance could occur. Should bat roosts be identified suitable mitigation, under a European Protected Species licence from Natural England, will be delivered under supervision from the Ecological Clerk of Works	Aquatic ecological protection
C-227	Techniques will be employed by the contractor to manage the risk of drilling fluid breakout or losses into the deposits or strata surrounding the HDD bore. Drilling fluids will be used to seal permeable deposits or strata. The naturally occurring bentonite clay will be used as the base for the drilling fluid, which will line the bore wall, preventing fluid loss and near-surface groundwater ingress.	Pollution prevention and remediation
C-229	Crossings of South Downs National Park Authority (SDNPA) designated Chalk streams will be designed to be less intrusive, for example by using a clear span bridge instead of a culvert to support the haul road or via use of trenchless crossing techniques. Open cut cable crossings will be constructed and reinstated in as short a timeframe as practicable. Details of the cable crossing methodologies at each watercourse can be found within the Crossing Schedule (Appendix 4.2, Volume 4) with further information on haul road crossings being provided in the Outline Code of Construction Practice.	Appropriate (trenchless and trenched) onshore cable watercourse crossing design.

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ID	Environmental measure proposed	Subject of key environmental measures specifically referenced in assessment Tables C-1 to C-3
C-230	The substation design will adhere to the National Grid target guidance for flood protection / resilience for new substations, which is for flood resilience to the 0.1% AEP (1 in 1,000) event plus climate change, plus a further 300mm.	
C-234	Techniques will be employed by the contractor to manage the risk of drilling fluid breakout or losses into the deposits or strata surrounding trenchless crossings (including HDD bores). The risk of breakouts can be mitigated by adopting good drilling practices, including: 1. Experienced drillers 2. Standard process and procedures for drilling, data collection and communication 3. Appropriate drill fluid monitoring (fluid properties, volume/flow and downhole pressure) 4. Development of a breakout response plan, so that equipment and trained personnel are in place for a rapid response; and 5. Acquisition of rights-of-way or easements for at least the first 60m from both the entry and exit holes so that no access-related delays are incurred in response to any breakouts.	Appropriate (Trenchless and Trenched) cable watercourse crossing design and installation.
C-236	For trenchless crossings detailed pre-drilling planning of methods and processes will be undertaken. The extensive pre-drill planning will include the compilation of potential sub-surface structures along the alignment, environmental due diligence of the sites of the entry and exit holes, a geotechnical investigation along the proposed alignment to determine geological conditions with an emphasis on identifying sensitive areas and problematic ground conditions, and the analytical analysis of fluid pressures versus depth of cover to determine adequate depths of cover to minimise breakouts.	Appropriate (Trenchless and Trenched) cable watercourse crossing design and installation.
C-241	During HDD activities, the drilling fluid engineer will carefully monitor the fluid usage in the recycling system and will quickly identify if fluid is being lost into the strata. If fluid loss is identified there are a number of measures that can be taken to seal the bore, including the following: 1. Modifying the drilling fluid properties to increase the effectiveness of the bentonite clay filter cake that lines the wall of the borehole; 2. Standard process and procedures in place for drilling, data collection and communication; 3. Appropriate drill fluid monitoring (fluid properties, fluid volume and flow, and downhole annular pressure); 4. Addition of stop-loss materials to bridge and seal larger voids in the soil; and 5. Modifying the mud weight (drilling fluid density) to either balance or counter the groundwater pressure depending on ground conditions.	Appropriate (Trenchless and Trenched) cable watercourse crossing design and installation.
C-245	Environmentally hazardous drilling fluids, or those containing groundwater hazardous substances, will not be used during trenchless crossings (including HDD).	Pollution prevention and remediation
C-246	A watching brief will be carried out by the appointed Contractor and their Environmental Clerk of Works to monitor the drilling of the trenchless crossing (TC-11) and the excavation of trenches along a targeted part of the cable route which is in closest proximity to karstic solution features between Hammerpot and The Buckmans (TC-12a) (Chainage 9.3km to 11.7km). The watching brief will be carried out to identify sensitive areas and ground conditions (swelling clays, transition zones, preferential pathways for breakouts) in order to provide any evidence of karstic solution features within the cable corridor at this location. In the event that any solution features are identified then micro-siting of the route would be carried out to avoid such features.	Appropriate (Trenchless and Trenched) cable watercourse crossing design.

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ID	Environmental measure proposed	Subject of key environmental measures specifically referenced in assessment Tables C-1 to C-3
C-250	The construction of the passing place upgrades along Michelgrove Lane will be programmed for Spring – Autumn (April – November) when groundwater levels in this area are typically lower.	Pollution prevention and remediation
C-251	Prior to the commencement of the construction of the passing places along Michelgrove Lane, these works areas will be visually checked by a qualified environmental advisor to confirm that there is no karst solution features.	Pollution prevention and remediation
C-252	Where the light construction access track (A-28) overlaps with part of an ephemeral pond near Cobden Farm, ground protection measures for accesses and haul routes and cross drainage will be considered to help minimise any potential interruption to flow pathways.	Pollution prevention and remediation
C-253	A water quality monitoring programme will be carried out at private water supplies in proximity of the Order Limits, for instance at Brookbarn Farm, Suzy Smith Racing / Angmering Park Estate and Michelgrove for an appropriate period prior to during and post construction of the cable route. Further details of the monitoring regime will be discussed and agreed with Arun District Council at the post DCO stage.	Pollution prevention and remediation

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Rampion 2
WIND FARM