

## Viking CCS Pipeline

# 9.9 Response to Examining Authority's First Written Questions (ExQ1)

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Applicant: Chrysaor Production (U.K.) Limited,  
a Harbour Energy Company  
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## Table of Contents

1	Introduction .....	2
1.1	Purpose of this Document .....	2
1.2	The DCO Proposed Development.....	2
2	Applicant's response to First Written Questions .....	2
	Appendix A : Supporting Information for First Written Question 1.1.10 .....	134
	Appendix B : Supporting Information for First Written Question 1.1.13 .....	135
	Appendix C : Supporting Information for First Written Question 1.1.18 .....	136
	Appendix D : Supporting Information for First Written Question 1.3.1 .....	137
	Appendix E : Supporting Information for First Written Question 1.3.3 .....	138
	Appendix F : Supporting Information for First Written Question 1.4.8 .....	139
	Appendix G : Supporting Information for First Written Question 1.15.6.....	140
	Appendix H : Supporting Information for First Written Question 1.17.6.....	141

## Tables

Table 1: Q.1.1 - General and Cross Topic Questions .....	3
Table 2: Q1.2 Air Quality and Emissions .....	17
Table 3: Q.1.3 Strategic Alternatives .....	21
Table 4: Q.1.4 Climate Change .....	27
Table 5: Q.1.5 Compulsory Acquisition .....	33
Table 6: Q1.6 Cultural Heritage.....	44
Table 7: Q.1.7 Draft Development Consent Order .....	49
Table 8: Q.1.8 Ecology and Biodiversity.....	69
Table 9: Q.1.9 Environmental Impact Assessment.....	73
Table 10: Q.1.10 Flood Risk, Hydrology and Water Resources .....	86
Table 11: Q.1.11 Geology and Land Use.....	100
Table 12: Q.1.12 Habitats Regulation Assessment .....	103
Table 13: Q.1.13 Landscape and Visual Amenity.....	110
Table 14: Q.1.14 Noise and Vibration.....	114
Table 15: Q.1.15 Socio-Economic Effects.....	118
Table 16: Q.1.16 Traffic and Transport.....	124
Table 17: Q.1.17 Waste and Minerals .....	131

# 1 Introduction

## 1.1 Purpose of this Document

- 1.1.1 This document has been prepared for the Viking CCS Pipeline (the 'Proposed Development') on behalf of Chrysaor Production (UK) Limited ('the Applicant'), in relation to an application ('the Application') for a Development Consent Order (DCO) that has been submitted under Section 37 of the Planning Act 2008 (PA 2008) to the Secretary of State (SoS) for Energy Security and Net Zero.
- 1.1.2 This document provides the Applicant's responses to the Examining Authority's (ExA) First Written Questions (WQs) as published on Wednesday 3 April.

## 1.2 The DCO Proposed Development

- 1.2.1 The Proposed Development comprises a new onshore pipeline which will transport CO<sub>2</sub> from the Immingham industrial area to the Theddlethorpe area on the Lincolnshire coast, supporting industrial and energy decarbonisation, and contributing to the UK target of Net-Zero by 2050. The details of the Proposed Development can be found within the submitted DCO documentation. In addition to the pipeline, the Proposed Development includes a number of above ground infrastructure, including the Immingham Facility, Theddlethorpe Facility and 3 Block Valve Stations.
- 1.2.2 A full, detailed description of the Proposed Development is outlined in *Environmental Statement (ES) Volume II Chapter 3: Description of the Proposed Development [APP-045]*.

# 2 Applicant's response to First Written Questions

- 2.1.1 This section provides the Applicant's response to the ExA's First WQs. Each table relates to a section of WQs, which are set out using an issues-based framework derived from the Initial Assessment of Principal Issues in the Rule 6 letter, Annex C (dated 15 February 2024).
- 2.1.2 Within each table, 4 columns are provided as follows:
- As provided by the ExA, Column 1 sets out the unique reference number to each question which starts with 'Q1' (indicating that it is from ExAQ1), followed by an issue number, a sub-heading number and a question number.
  - As provided by the ExA, Column 2 of the table indicates which Interested Parties (IPs) and other persons each question is directed to.
  - As provided by the ExA, Column 3 provides a written description of the question to be answered by Deadline 1; and
  - As provided by the Applicant, Column 4 provides a written response to the question(s) raised.
- 2.1.3 Where deemed necessary, additional information (presented within the appendices of this document) has been provided by the Applicant in support of specific written questions.

**Table 1: Q.1.1 - General and Cross Topic Questions**

ExA-Q.1.1	Question to	Question	Applicant response
<b>Planning Policy</b>			
1.1.1	Applicant	<p><b>Which National Policy Statements (NPS) are Important and Relevant</b></p> <p>The written questions 1.1.2 and onward directly relate to the Applicant's case as submitted to the Planning Inspectorate, thus relate to the energy suite of NPSs.</p> <p>However, it occurs to the ExA that no energy is being produced by this scheme and no parts of the Proposed Development are designed for producing energy or capturing the emissions arising from an energy project contained within the application for development consent. In purest form, the application appears to be for a waste-processing development.</p> <p>For these reasons, the ExA is curious to understand:</p> <ol style="list-style-type: none"> <li>1) Why the Applicant considers the energy suite of NPSs are the most important and relevant to this application.</li> <li>2) Whether there are aspects of the NPS for Geological Disposal Infrastructure that may be more important and relevant.</li> <li>3) Whether the NPS for Hazardous Waste has any importance and relevance to this Examination.</li> <li>4) Give reasons for any assertions made regarding the above including, where necessary, any commentary on how the Proposed Development meets the policy criteria of these other NPSs.</li> </ol>	<p>1) As set out in section 2 of the Planning Design and Access Statement <b>[APP-129]</b>, the Applicant considers that there is no National Policy Statement (NPS) that directly applies to CO<sub>2</sub> pipelines. As such, section 105 will apply to the determination of this application.</p> <p>The Applicant considers that the Overarching NPS for Energy (EN-1) and the NPS for gas supply infrastructure and gas and oil pipelines (EN-4) are important and relevant considerations.</p> <p>EN-1 sets out overarching principles in support of decarbonisation of UK infrastructure, in particular the need to decarbonise the energy system. The now withdrawn 2011 EN-1 (referred to as "EN-1 (2011)") sets out a range of policy ambitions for carbon capture and storage in the UK within section 4.7. The Proposed Development would contribute to those aims. Whilst the Proposed Development is neutral to the nature of the operations that connecting emitters are undertaking, it is anticipated that this will include decarbonisation of energy infrastructure. For example, The Viking CCS Pipeline is anticipated to contribute to the decarbonisation of two gas and steam turbines forming part of the VPI Immingham Combined Heat and Power Plant (see <b>[RR-115]</b> and <b>[APP-131]</b>). Furthermore, as set out in paragraph 2.7.7 of the Need Case for the Scheme <b>[APP-131]</b>, potential future development enabled by the Viking CCS Pipeline could include RW's new power station at Stallingborough close to the Humber Estuary.</p> <p>EN-4, although it does not specifically provide for CO<sub>2</sub> pipelines, sets out generic pipeline consenting requirements. Paragraph 1.8.2 of EN-4 (2011) states:</p> <p><i>"Pipelines which meet the Planning Act threshold could be carrying different types of gas, fuel or chemicals. This NPS only covers those nationally significant infrastructure pipelines which transport natural gas or oil. However, information in this NPS may be useful in identifying impacts to be considered in applications for pipelines intended to transport other substances."</i></p> <p>The Applicant therefore considers that EN-1 and EN-4 are important and relevant to determination of this application. The Applicant notes that the Secretary of State took the same view in her decision letter of 20 March 2024 in respect of the HyNet Carbon Dioxide Pipeline</p> <p>2) The Applicant does not consider that the NPS for Geological Disposal Infrastructure to be an important and relevant consideration in this Application. Section 1.3 sets out the scope of that NPS, which applies to geological disposal of radioactive waste. The policy criteria that are then set out within that NPS, and the matters to be included in any assessment, relate specifically to that type of technology.</p> <p>The Application does not consider that form of development as comparable to a carbon dioxide pipeline. As noted in response (1) above, EN-4 contains an express statement that its contents may be useful in identifying impacts in applications for pipelines that do not transport oil and gas. There is no comparable suggestion in the NPS for Geological Disposal Infrastructure.</p>

ExA-Q.1.1	Question to	Question	Applicant response
			<p>3) The Applicant does not consider the NPS for Hazardous Waste to be an important and relevant consideration in this application. Section 1.2 sets out the scope of that NPS, which relates to either (i) construction of facilities in England where the main purpose is disposal of hazardous waste, or (ii) alteration of a hazardous waste facility in England. Neither is a comparable form of development to an onshore carbon dioxide pipeline, which is the Nationally Significant Infrastructure that this application applies to. The Applicant notes that carbon dioxide is not treated as a hazardous substance.</p> <p>4) For the reasons set out above, the Applicant does not consider that the NPS for Geological Disposal Infrastructure or the NPS for Hazardous Waste to be important and relevant and therefore has no further comment on accordance of the Proposed Development with those NPSs.</p>
1.1.2	Applicant	<p><b>New NPS</b></p> <p>The Viking CCS Pipeline Project application was submitted in October 2023. A new suite energy of NPSs was designated on 17 January 2024 (NPSs dated November 2023). However, the NPSs are clear that these only become 'designated' for applications submitted after 17 January 2024, though they are capable of being important and relevant matters.</p> <p>Although the Applicant has presented the case for the Proposed Development under the (then draft) NPSs across the Environmental Statement (ES), the Applicant is invited under this question to set out any further thoughts, revisions or amendments to its position having reflected upon the now designated versions of the NPSs.</p>	<p>The Applicant agrees that the NPS's designated in 2024 do not directly apply to this application but are capable of being important and relevant in its determination.</p> <p>The Applicant has submitted an Addendum to the Planning, Design and Access Statement, which sets out the Applicant's position on accordance with EN-1 (2023) and EN-4 (2023).</p> <p>In summary, the Applicant considers that EN-1 (2023) significantly strengthens the needs case for the Proposed Development. This sets out that reaching the UK's 2050 Net Zero target necessitates a significant amount of new energy infrastructure, including <i>"infrastructure needed to capture transport and store carbon dioxide"</i> [para 2.3.4]. EN-1 (2023) goes on to state that there is an <i>"urgent need"</i> for CCS infrastructure [para 3.5.1] and that <i>"alternatives to new CCS infrastructure for delivering net zero by 2050 are limited"</i> [para 3.5.9]. Pipelines for the transport of carbon dioxide fall within the definition of "critical national priority" infrastructure, which adds significant weight in favour of the Proposed Development in the overall planning balance.</p>
1.1.3	All Local Authorities	<p><b>New NPS</b></p> <p>Set out the legal and policy implications arising from the designation of the new NPSs, the impacts (if any) on the Examination and any other matters important and relevant for the ExA to take into account. This should include, if it is felt that the energy suite of NPSs apply, an explanation of how the transitional provisions will work given that this project was accepted for Examination shortly before designation of the new energy NPSs.</p>	
1.1.4	Applicant	<p><b>Section 104 or Section 105 of the Planning Act 2008</b></p> <p>The Applicant has made the assertion that there are no NPSs in effect for the Proposed Development (and certainly no technology specific NPSs), thus section (s) 105 of the Planning Act 2008 (PA2008) is applicable. The ExA would appreciate clarification on the following points:</p> <p>1) With specific reference to NPS EN-1, Paragraph 3.6.5, explain the Applicant's view as to why the Proposed Development does not fall for consideration under s104 of PA2008.</p>	<p>1) The scope of EN-1 (2011) is set out in detail in section 1.4 and does not include development of cross-country pipelines for the transport of carbon dioxide. Paragraph 3.6.5 of EN-1(2011) relates to four commercial scale demonstration projects for carbon capture and storage at UK power stations that the UK Government at that time intended to take forward. The Proposed Development does not form part of any demonstration phase of carbon dioxide transport. The Applicant considers that the UK policy position has moved on since the circumstances set out in paragraph 3.6.5 in EN-1 (2011).</p> <p>2) and 3) Whilst paragraph 1.8.1(iv) refers to pipelines over 16.093km as being potentially within the scope of EN-4 (2011), this is subject to paragraph 1.8.2, which states (underline added):</p>

ExA-Q.1.1	Question to	Question	Applicant response
		<p>2) With specific reference to NPS EN-4, Paragraph 1.8.1 to 1.8.3 (particularly 1.8.1(iv)), explain why the Proposed Development does not fall for consideration under s104 of PA2008.</p> <p>3) In the Planning, Design and Access Statement [APP-129, Paragraphs 1.5.2 and 1.5.3] there is admission that the project would constitute a Nationally Significant Infrastructure Project (NSIP) because it falls in the definition of a cross-county pipeline. By this same rationale and definition, having regard to NPS EN-4 Paragraph 1.8.1(iv), why is it considered that the Proposed Development does not fall for consideration under s104 of PA2008?</p> <p>4) Has the Applicant considered that elements of the Proposed Development may fall within the scope of the NPSs, whilst other elements may fall outside? Please set out the considerations in relation to each.</p>	<p><i>Pipelines which meet the Planning Act threshold at 1.8.1 (iv) could be carrying different types of gas, fuel or chemicals. <u>This NPS only covers those nationally significant infrastructure pipelines which transport natural gas or oil.</u> However, information in this NPS may be useful in identifying impacts to be considered in applications for pipelines intended to transport other substances.</i></p> <p>As the Proposed Development does not transport natural gas or oil, it is not within the direct scope of EN-4 (2011).</p> <p>4) The Applicant has considered whether any element of the Proposed Development may fall within the scope of the NPSs and considers that it would not do so. For the reasons set out in response to WQ1.1.1, 1.1.2 and this question, the new pipeline itself would not fall within the scope of EN-1 (2011) or EN-4 (2011). The Applicant also considers that none of the Above Ground Infrastructure, Block Valve Stations or other associated development would fall within their scope.</p>
<b>Planning Permissions</b>			
1.1.5	All Local Authorities	<p><b>Updated Baselines</b></p> <p>The local planning authorities to confirm, either in response to this question or within their Local Impact Reports (LIR):</p> <p>1) whether the Applicant's summary of the local planning policy situation is complete or if policies have been missed or require updating; and</p> <p>2) whether any additional applications or planning permissions need to be taken into account as part of the cumulative effects assessment.</p>	
1.1.6	North Lincolnshire Council	<p><b>Applications under the Town and Country Planning Act</b></p> <p>The Applicant reports that <i>"proposals by Phillips 66 and Immingham VPI (Humber Zero) are part of separate applications under the Town and Country Planning Act 1990 which are currently being determined by the LPA (North Lincolnshire Council) and, as such, these works do not form part of the Proposed Development."</i></p> <p>Update the Examination of what is known about these applications and whether any decision has been reached.</p>	
<b>Legislative Framework</b>			
1.1.7	Applicant	<p><b>Other Consents and Licences</b></p> <p>The list of other consents required [APP-130] appears to omit consideration of a number of important consents. In particular, the Applicant is required to outline progress and timescales towards obtaining:</p> <p>a) Hazardous Substances Consent;</p> <p>b) Control of Major Accidents Hazards (COMAH) Licence;</p> <p>c) Greenhouse Gas Permit;</p>	<p>The Applicant has considered whether it would be necessary to obtain the consents and licences listed in WQ1.1.7.</p> <p>The Consents and Agreements Position Statement [APP-130] has been updated by the addition of Appendix B that provides commentary on whether each consent is needed to construct and operate the Proposed Development. A revised version has been submitted at Deadline 1.</p>



ExA-Q.1.1	Question to	Question	Applicant response
		<p>d) Permit for the Transport of Abnormal Loads;</p> <p>e) Section 278 of the Highways Act for carrying out of works to the public highway;</p> <p>f) Gas Safety (Management) Regulations 1996 consent;</p> <p>g) Pipeline Safety Regulations 1996; and</p> <p>h) Connection Agreement for connection to the electricity distribution network.</p>	
1.1.8	Applicant	<p><b>Offshore elements of the Viking CCS Project</b></p> <p>In Appendix B to their Relevant Representation (RR) [RR-073], Natural England (NE) have raised the complexity of examining associated NSIPs holistically.</p> <p>1) Given that the Viking CCS Project encompasses both onshore and offshore elements, but the offshore elements are not before this Examination, how does the Applicant respond to NE's suggestions and concerns?</p> <p>2) The Applicant to provide an opinion as to the interaction between the onshore and offshore elements of Proposed Development, and specifically what the Applicant thinks (and why) the ExA can take into account in making its deliberations?</p> <p>3) Can the Applicant set out clearly how intra and inter project effects are accounted for the ES as it relates to both the onshore and offshore elements of this overall project?</p> <p>4) When there is a high dependence of this project upon the success of the offshore consenting process, why the Viking CCS Project as a whole does not form a single NSIP application.</p>	<p>1)The Applicant notes the advice set out in Appendix B of Natural England's relevant representation.</p> <p>The Applicant has provided a range of information in the Bridging Document <b>[APP-128]</b> relating to the offshore elements of the overall Viking CCS Project. Table 1 and section 5 of that documents set out the detail of the new infrastructure that would be constructed offshore and the consenting regimes that would apply to the offshore elements of the overall development. Section 6 of the Bridging Document considers the potential for intra and inter project effects between the onshore works for which consent is sought through this DCO application and the offshore works that will be consented separately, the conclusion is that there is no potential pathway for interaction and therefore no potential for inter-project cumulative effect.</p> <p>The approach taken by the Applicant to seek separate consents for the onshore and offshore elements of the project is the same approach that has been taken by other carbon capture and storage projects and is supported by policy in EN-1 (2023). Both the Net Zero Teesside and HyNet carbon capture projects, for example, consented the onshore transport pipeline separately from the offshore works necessary for subsea storage (e.g. installation of a new not permanently attended installation and drilling of wells). This approach is reflected in guidance in EN-1 (2023). In respect of CCS projects, this states at paragraph 4.9.10:</p> <p><i>"Offshore CO<sub>2</sub> transport and storage infrastructure is not covered by this NPS, is subject to a separate permitting and licensing regime, and will require an applicant to secure a Carbon Dioxide Appraisal and Storage Licence and a Storage Permit; a Carbon Storage Lease and a Seabed Lease; offshore pipelines require a Pipeline Works Authorisation and notification in accordance with Pipelines Safety Regulations. Offshore CO<sub>2</sub> transport and storage proposals will need to be supported by an EIA. A suite of environmental approvals will also be required for the construction, development, and the operational phase."</i></p> <p>Paragraphs 4.9.11 – 4.9.22 then set out what an applicant should include in an application for CCS power plant projects and states <i>inter alia</i>:</p> <p><i>"4.9.18 The chain of CCS has three links: capture of carbon, transport, and storage. Due to the approach of deploying CCS in clusters in the UK with shared transport and storage infrastructure, it is likely that development consent applications for power CCS projects may not include an application for consent for the full CCS chain (including the onward transportation and storage of CO<sub>2</sub>).</i></p> <p><i>4.9.19 However, development consent applications for power CCS projects should include details of how the captured CO<sub>2</sub> is intended to be transported and stored, how cumulative impacts will be assessed and whether any necessary consents, permits and licences have been obtained.</i></p>

ExA-Q.1.1	Question to	Question	Applicant response
			<p><i>4.9.20 Applicants gaining consent for CCS infrastructure will need a range of consents from different bodies. One method for transporting captured carbon dioxide is through pipelines located both onshore and offshore. Onshore pipelines over 16.093 kilometres in length classify as NSIPs and require a Development Consent Order.”</i></p> <p>The Applicant has provided information on the full CCS chain within the application. The Applicant has set out detail of emitters that it is anticipated would be sequenced to the Viking CCS Project (i.e. Phillips 66 and VPI Immingham). Where those projects have applied for planning permission for carbon capture infrastructure, this has been assessed alongside the Proposed Development as part of the cumulative assessment in the EIA. As set out above, the Bridging Document sets out the detail of the offshore elements of the Viking CCS Project and considers whether there is any potential for intra-project environmental effects to arise. The Applicant’s approach therefore aligns with the policy in EN-1 (2023).</p> <p>The onshore elements of the project have been subject to a robust EIA process, which is reported in the Environmental Statement. The offshore elements will also be subject to an EIA with a requirement for an Environmental Statement to be submitted to and approved by OPRED – the Offshore Petroleum Regulator for Environment and Decommissioning. The potential environmental effects of all aspects of the Viking CCS Project will be scrutinised through the relevant consenting processes. As noted above, the Applicant has considered the potential for intra-project cumulative effects and concluded that there is no pathway for these to arise, due to the nature of the works to be undertaken and their separation distance. Natural England’s concerns in this regard are therefore misplaced.</p> <p>Natural England has suggested that a requirement should be included in the DCO that prevents any onshore works commencing until the offshore works are consented. The Applicant considers that such a requirement would be unnecessary. The Applicant has updated the Consents and Agreement Position Statement <b>[APP-130]</b> to make reference to the offshore infrastructure and confirms that it does not consider there to be any reason to consider that those consents will not be granted. In practice, the Applicant is not going to construct the Proposed Development without certainty that it will be able to store the carbon dioxide offshore. Natural England’s suggestion that the Proposed Development could be constructed and become a stranded asset is unrealistic.</p> <p>Natural England has referenced their advice on Triton Knoll wind farm but have omitted that the Secretary of State when determining that application disagreed with the advice and did not follow it. In their recommendation on the Triton Knoll Offshore Wind Farm Order 2013, the Panel that considered the application recommended that a requirement be included that no works on the offshore generating station shall commence until the Secretary of State has confirmed in writing that all the necessary consents for the connection and transmission works have been obtained. The Secretary of State disagreed with that recommendation, stating in his decision letter:</p> <p><i>“3.17. The Secretary of State does not consider that EN-1 requires that a Grampian-style requirement of the kind recommended by the Panel is imposed simply because the application envisages further onshore development. Rather, EN1 envisages that any impacts of such further development will normally be dealt with in the consenting procedure for that development.</i></p> <p><i>3.18. In the Secretary of State’s view, the consenting procedures in place in relation to the onshore infrastructure are sufficiently robust to ensure that the impacts of the infrastructure</i></p>

ExA-Q.1.1	Question to	Question	Applicant response
			<p>are appropriately mitigated. In particular, the Secretary of State notes that any subsequent supporting EIA assessment for grid connection infrastructure would also need to consider cumulative impact with the offshore wind farm development.</p> <p>3.19. The Secretary of State is also not convinced that it is necessary to link the offshore and onshore elements of the development in order to ensure that any financial contributions made under a future s.106 agreement relate to the project as a whole rather than only the subsequent grid connection infrastructure applications. In the case of the Triton Knoll project, the offshore generating element would be located 33km off the coast of Lincolnshire and 48km off the coast of North Norfolk. The Panel found that the visual impacts of the offshore development are very limited [ER 5.5.41], and that to the extent that a judgment can be made, the limited onshore effects of construction in the DCO area, due to its distance from the shoreline, will significantly limit cumulative effects as observed from the same coastal locations [ER R.5.42]. The Secretary of State therefore considers that the potential cumulative impact of the offshore element of the overall project is not likely to be a significant component of the impact of the onshore element of the project. He does not consider therefore that it is appropriate to impose a Grampian-style requirement in order to ensure that such cumulative impacts are taken into account when assessing the scale of contributions under a section 106 agreement. Nor is it clear how a Grampian-style requirement of the type suggested would achieve such a linkage.</p> <p>3.20. For the reasons set out above, the Secretary of State has decided therefore that it is not necessary to include the Grampian-style requirement recommended by the Panel.”</p> <p>The Applicant submits that this was the correct approach, which is further reinforced by the policy in EN-1 (2023). The Applicant therefore considers it unnecessary to include any requirement in the draft DCO <b>[AS-040]</b> that would prevent the onshore works commencing until the Secretary of State confirmed she was satisfied that all necessary consents for the offshore elements of the project were in place.</p> <p>2)The Applicant considers that the Examining Authority have been provided with an overview of the full sequence of the carbon capture process for the Viking CCS Project from the point that the carbon dioxide will be captured to the storage in the depleted gas fields. The Examining Authority can take account of the fact that there are no obvious impediments to the offshore consents being granted. The Examining Authority have been provided with reasoning in the Bridging Document as to why there is no pathway for intra-project cumulative effects.</p> <p>3)The Bridging Document <b>[APP-128]</b>, as set out above, considers the potential for intra-project cumulative effects in section 6. The potential for intra-project cumulative effects was also considered in the long list of cumulative schemes as set out in Table 1 of ES Volume II Chapter 20: Cumulative Effects Assessment <b>[APP-062]</b>.</p> <p>4)The onshore and offshore elements of the project are being progressed separately on different development timelines. The offshore consenting regime for the storage of carbon dioxide, overseen by the North Sea Transition Authority, has its own requirements of what must be included in an application. Those requirements are different from what is required as part of the DCO application for the Proposed Development. The Applicant considers it</p>



ExA-Q.1.1	Question to	Question	Applicant response
			<p>more appropriate to apply through the separate regulatory processes that are set up to deal with the different elements of the overall project. This approach is recognised in EN-1 (2023) and is the same approach that has been taken by similar projects, such as The Net Zero Teesside Project and HyNet Carbon Dioxide Pipeline.</p>
1.1.9	Applicant	<p><b>Precedents and Novel Drafting in the draft Development Consent Order (dDCO) [AS-008]</b></p> <p>Notwithstanding drafting precedent that may have been set by previously made Development Consent Orders (DCOs) or similar orders, full justification should be provided for each power/ provision taking account of the facts of this particular Proposed Development.</p> <p>1) Applicant, revise the Explanatory Memorandum (EM) on this basis, where necessary, and highlight for the ExA where changes on these grounds have been required.</p> <p>2) Where drafting precedents in previously made DCOs have been relied on, these should be checked to identify whether they have been subsequently refined or developed in the most recent made DCOs so that the proposed dDCO provisions reflect the Secretary of State's (SoS) current preferences. Applicant, revise the dDCO drafting and the EM on this basis, where necessary, and highlight for the ExA where changes on these grounds have been required.</p> <p>3) Applicant to check and signpost where it has explained the purpose of and necessity for any provision which uses novel drafting in the EM and identify the PA2008 powers on which any such provision is based. The drafting should be unambiguous, precise, achieve what you want it to achieve, be consistent with any definitions or expressions in other provisions of the dDCO and follow guidance and best practice for Statutory Instrument (SI) drafting referred to above.</p>	<p>1), 2) and 3) The Applicant has reviewed the Explanatory Memorandum and has made some amendments to the drafting. The Applicant has not considered it necessary to make significant amendment, as it considers that the level of detail and justification that has been included is sufficient to explain the purpose of each power / provision and is a similar level of detail to that provided in Explanatory Memoranda for other DCO projects.</p> <p>The Applicant has updated sections 1.3 and 1.4 of the Explanatory Memorandum to make clearer what works forming part of the Proposed Development would constitute the NSIP and what would be associated development.</p> <p>The Applicant has also reviewed each of the articles based on recent precedent, in particular the HyNet Carbon Dioxide Pipeline Order 2024 that was granted in March 2024. The Applicant had regard to the developing drafting of that DCO, which was in Examination whilst the Applicant was in the pre-application stage for the Proposed Development. The Applicant has updated the Explanatory Memorandum to note where similar provisions have been adopted.</p>
1.1.10	Applicant	<p><b>The Net Zero Teesside Project</b></p> <p>On 16 February 2024, development consent was granted for the Net Zero Teesside Project. In reviewing the SoS' decision letter and the DCO (as made), does the Applicant have anything to change, justify or comment upon in relation to the current application for the Proposed Development?</p>	<p>The Applicant has submitted a separate note responding to this written question. This is included within Appendix A of this response to the Examining Authority's first written questions</p>
1.1.11	Local Authorities	<p><b>Purposes of an Area of Outstanding Natural Beauty (AONB)</b></p> <p>On 26 December 2023, s245 of the Levelling-Up and Regeneration Act 2023 amended the duty in the Countryside and Rights of Way Act 2000 in relation to AONBs; the National Parks and Access to the Countryside Act 1949 in relation to National Parks, and the Norfolk and Suffolk Broads Act 1988 in relation to the Broads. The amendment now requires relevant authorities "...to <b>seek to further the purpose</b> of conserving and enhancing the natural beauty of the AONB/National Park/Broads." <b>(ExA emphasis)</b></p> <p>Can the relevant Local Authorities provide a commentary on whether not the Proposed Development would affect their ability to 'further the purposes' of the Lincolnshire Wolds AONB?</p>	

ExA-Q.1.1	Question to	Question	Applicant response
<b>Design</b>			
1.1.12	Applicant	<p><b>The Principles of Good Design</b></p> <p>The Planning Design and Access Statement [APP-129, Paragraph 6.3.14 ff] details some of the elements of design taken into account by the Applicant. However, this raises several questions:</p> <ol style="list-style-type: none"> <li>1) What options for fencing were considered and why was 'prison fencing' deemed appropriate in terms of visual appearance?</li> <li>2) The equipment kiosks are said to be clad in metal panels. What colour will these panels be and how reflective will the surface be?</li> <li>3) What other materials for the kiosks and block valve stations were considered and why were they discounted?</li> <li>4) There are no design details for the appearance of the venting stacks across the whole project. Describe how these features would look.</li> <li>5) In Paragraph 6.3.29 it states that landscaping would help blend the Theddlethorpe Above Ground Installation (TAGI) into the surroundings. With particular emphasis on the Theddlethorpe Option 2 site, how high will the landscaping grow and how will this realistically obscure or reduce views of the 25 metre (m) high venting equipment?</li> </ol>	<p>1) The fencing is essentially wire mesh security fencing that is referred to as 'prison fencing' in the construction industry. This type of fencing is widely used at commercial and industrial facilities and is needed to provide a secure enclosure around the Block Valve Stations, the Immingham Facility, and the Theddlethorpe Facility. All of these above ground facilities have been designed with consideration to the surrounding environment and visual amenity. Block Valve Stations and the Theddlethorpe Facility Option 2 would be screened from view by a 10m wide landscaping belt, whilst Theddlethorpe Option 1 would benefit from existing screening.</p> <p>2) Equipment kiosks will be metal clad with polyester powder coating applied in a colour to suit the surrounding environment, such that the Immingham Facility and Theddlethorpe Facility would likely be grey due to the location, whilst those at Block Valve Stations would likely be green to blend in appropriately with the surrounding area. The colours will be specified as matte and/or anti-reflection to avoid glare to the local environment.</p> <p>3) Materials for the kiosks must provide a secure enclosure to protect the equipment from weather and potential vandalism. Metal is considered to be the most appropriate material for this use. 4) Venting stacks would be constructed from metal. The FEED stage design will detail the precise requirements but will likely be a guide wire or tower frame supported stack (single or dual wall) fabrication, manufactured from mild steel, stainless steel or another alloy. Protective finishes would be in a neutral colour to blend with the skyline.</p> <p>5) The Applicant has applied good design by placing the facilities as close to the LOGGS pipeline as possible and maximising the use of existing landscape planting. Where landscaping is not present, new planting will be provided to screen the facilities from view and assimilate with the surrounding landscape.</p> <p>The Theddlethorpe Facility Option 2 would make use of agricultural land located along the route of the pipeline to minimise the area required for the facility. The location has been selected to make use of existing mature vegetation which would provide screening along one side of the facility and allow the facility to be absorbed into the existing background with new screening provided in the foreground. This screening would be supplemented by a new landscape strip around the rest of the facility in keeping with the field boundaries in the surrounding area.</p> <p>Landscaping will comprise of trees and shrubs of varying height dependent upon proximity to the pipeline/fence line and will be an adequate to screen all of the equipment in the Theddlethorpe Facility except the venting stack that will extend above this height. The landscaping around the Theddlethorpe Facility has been designed to be similar in appearance to the vegetation in the surrounding area which comprises field boundaries formed from tree and shrub planting.</p> <p>Wireline representations and photomontages of both Theddlethorpe Facility options (from viewpoint 27 and 30) are provided within ES Volume IV Appendix 7.2 – Visualisations [APP-088].</p>
1.1.13	Applicant	<b>Illustrative Drawings</b>	<p>There are existing visualisations provided in ES Volume IV Appendix 7.2: Visualisations [APP-088]. These include:</p>

ExA-Q.1.1	Question to	Question	Applicant response
		<p>The ExA acknowledge that the final designs and layouts of the Immingham Above Ground Installation (IAGI), TAGI and block valve stations are not before the Examination. Nonetheless, the ExA requests 3D illustrative visualisations of each of these parts of the Proposed Development were provided giving an impression of height, colour and form.</p>	<p><u>Photomontages:</u></p> <ul style="list-style-type: none"> <li>• Figures 34 and 35: Viewpoint 10 Thoroughfare BVS</li> <li>• Figures 38 and 39: Viewpoint 22 Louth Road BVS</li> <li>• Figure 44: Viewpoint 27 Theddlethorpe Option 2</li> <li>• Figures 46 and 47: Viewpoint 30 Theddlethorpe Option 1</li> <li>• Figures 50 and 51: Viewpoint 31 Washingdales Lane BVS</li> </ul> <p>Higher resolution versions of these figures are provided in Appendix B of this Document. There is currently no photomontage of the IAGI, due to the existing heavily industrialised nature of the site and the scale of existing buildings.</p> <p><u>3D Visualisations:</u></p> <p>These were included in ES Volume II Chapter 3: Description of the Proposed Development [APP-045] in Figures 3-7 and 3-14. Larger scale and higher definition versions of these are now provided in Appendix B of this document. These include:</p> <ul style="list-style-type: none"> <li>• Figure 1 Immingham Facility</li> <li>• Figure 2 Generic Block Valve</li> <li>• Figure 3 Theddlethorpe Facility Option 1</li> </ul>
1.1.14	Local Authorities	<p><b>Design Review</b></p> <p>Can all IPs please confirm if an Independent Design Review Process should be required for this Proposed Development?</p>	
1.1.15	Applicant	<p><b>Sensitive to Place</b></p> <p>NPS EN-1 (2024) at paragraph 4.7.2 states: <i>“Applying good design to energy projects should produce sustainable infrastructure sensitive to place, including impacts on heritage...matched by an appearance that demonstrates good aesthetic as far as possible.”</i></p> <p>With particular attention on the Theddlethorpe Option 2 site, set out how the design process, starting with site selection criteria, accords to these design principles?</p>	<p>The Theddlethorpe Facility needs to provide the equipment for the safe and efficient transfer of CO<sub>2</sub> from the new Viking CCS Pipeline to the existing LOGGS pipeline. Two options have been put forward for the Theddlethorpe Facility based on the availability of land. Land for the preferred option (Option 1) is not owned by the Applicant, and whilst there is ongoing discussion over a lease agreement with National Gas Transmission plc (landowner) it is deemed necessary to consider an alternative site.</p> <p>The Applicant has applied good design by placing the facilities as close to the LOGGS pipeline as possible and maximising the use of existing landscape planting. Where landscaping is not present, new planting will be provided to screen the facilities from view and assimilate with the surrounding landscape.</p> <p>Theddlethorpe Facility Option 2 would make use of agricultural land located along the route of the pipeline to minimise the area required for the facility. The location has been selected to make use of existing mature vegetation which would provide some screening along one side of the facility. This screening would be supplemented by a new landscape strip around the rest of the facility in keeping with the field boundaries in the surrounding area. This is considered to comply with paragraph 4.6.2 of NPS EN-1, 2024 by providing good aesthetic as far as possible given the nature of the development in this location.</p> <p>Paragraph 4.6.11 of NPS EN-1, 2024 outlines that the Secretary of State should consider whether they are satisfied that the Applicant has considered functionality (including fitness for purpose and sustainability) and aesthetics (including contribution to the quality of the area in which it would be located, any amenity benefits, visual impacts). Both options 1 and</p>

ExA-Q.1.1	Question to	Question	Applicant response
			<p>2 include only the equipment and facilities necessary to operate and maintain the Viking CCS Pipeline and connect with the LOGGS pipeline. The design for the facility includes access for maintenance and inspections, suitable pipe connections and safety systems and control equipment. The layout and appearance of the facility is driven by the need to provide a functional pipeline connection.</p> <p>At either Option, the proposed facility would be constructed from materials that are suitable for a pipeline and facility located outdoors. Both options have been designed to take into account flood risk and any structures would be removed during the decommissioning phase to return the land to agricultural use.</p> <p>With regards to aesthetic appearance, the Theddlethorpe site includes a range of permanent above ground components such as pig receiver/launcher, HIPPS equipment and control kiosk. The site has minimised the amount of above ground components as practical, which will be designed to reduce the visual impact. Equipment kiosks and fencing would have polyester powder coating applied in a colour to suit the surrounding environment.</p> <p>The design of the Theddlethorpe Facility is considered to be in general accordance with the now superseded parts 4.5 and 4.6 of the NPS EN-1, 2011 and NPS EN1, 2024.</p>
1.1.16	Applicant	<p><b>Beauty</b></p> <p>National guidance stresses the need for developments to be beautiful. Explain how the principles of beauty have been applied to the design process for the Proposed Development.</p>	<p>The Proposed Development is predominantly a buried pipeline and, as such, the focus was on minimising the loss of existing features that add beauty to the rural landscape. A key design consideration was therefore to seek to avoid the loss of woodland, tree groups and veteran trees. The design also sought to utilise existing gaps in hedgerows wherever possible, to avoid unnecessary hedgerow loss.</p> <p>The designs proposed for the above ground installations were based upon design codes, standards, and specifications for this type of infrastructure. These typically focus on functionality, low maintenance and safety, and typically keep the form as minimal as possible. Options to make the above ground pipework and kiosks more beautiful were therefore limited and the decision was made to include screen planting around the sites other than those that are already screened, or which are already in an industrial setting. The design intent was not only to conceal these above ground installations, but to give the appearance of a small, wooded area, typical of the local landscape.</p>
<b>Miscellaneous</b>			
1.1.17	Applicant	<p><b>Works Plans</b></p> <p>The scheme design, referred to in requirement 4 (1) of the DCO [AS-008], only refers to works 1, 14, 21, 31, 42 and 44 as being required to be in general accordance with the works plans. The ExA are unclear as to why this is the case, as all works are required to be in accordance with the works plans. The Applicant is requested to provide detail and reasoning on this requirement of the DCO in relation to all works.</p>	<p>Requirement 4(1) requires the specified works numbers to be carried out in accordance with “the general arrangement plans”, not in general accordance with the works plans. “The general arrangement plans” is a defined term in Article 2 of the draft DCO. Its definition relates to various application documents that detail an indicative layout for above ground infrastructure and block valve stations (documents [APP-019], [APP-020], [APP-021], [APP-027], [APP-028], [APP-029]). These documents would be certified by the Secretary of State in accordance with Article 44 of the Draft DCO [AS-040].</p> <p>The purpose of sub-paragraphs (1) and (2) of requirement 4 is to ensure that the above ground infrastructure forming part of the development is not built in a materially different manner than the indicative designs submitted with the application.</p> <p>All works forming part of the Proposed Development will need to be undertaken in accordance with the areas shown on the Work Plans (Revision A) [AS-046 and AS-047].</p>



ExA-Q.1.1	Question to	Question	Applicant response
			This is secured through the drafting in Part 1 of Schedule 1, which is done by reference to the Works Plans and through requirement 4(3) of the Draft DCO <b>[AS-040]</b> .
1.1.18	Applicant	<p><b>Working Corridor</b></p> <p>The ES [APP-045, Section 3.2 and 3.3] provides a description of the design envelope of the Proposed Development. It states that for the onshore pipeline, the limits of deviation are set at 100m, with a pipeline construction working width of 30–50m along the majority of the route. This is stated to be due to the Applicant wanting to maximise flexibility in order to avoid post-consent amendments. The Applicant also states in paragraph 3.3.3 that, in most areas, the limits of deviation are contiguous with the red line boundary and therefore the maximum or worst-case scenario is accounted for within the assessments. It is however noted that the Applicant does not clearly state where the limits of deviation and red line boundary are not contiguous.</p> <p>The Applicant is requested to provide this information.</p>	A set of plans is provided in Appendix C of this document, which show the limits of deviation in relation to the overall Order Limits.
<b>Major Hazards and Accidents</b>			
1.1.19	Applicant	<p><b>Health and Safety Executive (HSE)</b></p> <p>The ExA notes that the HSE have not registered as an Interested Party for this particular project. Could the Applicant confirm the full extent of any discussions held with the HSE and what feedback, if any, was received on the safety aspects of this NSIP?</p>	<p>The Applicant has engaged with the HSE, including their science division, to seek their expert opinion on its pipeline design and associated risk assessments. The Applicant will continue to engage the regulator throughout the pipeline design and subsequent operation.</p> <p>The Applicant's ongoing engagement with the HSE in relation to this project includes interactions with HSE Policy Advisors, the HSE Pipelines Group and the HSE Science Division (HSL). This ongoing engagement during the pre-application stage included five meetings throughout 2022 and 2023 including a full day workshop on key aspects of CCS with HSL in February 2023.</p> <p>No concerns have been raised at any sessions regarding the Applicant's approach to process and pipeline safety.</p>
1.1.20	Applicant UK Health Security Agency	<p><b>Confirmation of agreed approach</b></p> <p>Can it be confirmed that the requirements of the UK Health Security Agency [APP-059, Table 17-4] have been fully met and that the Environmental Statement (ES) complies with the relevant Environmental Impact Assessment (EIA) Regulations.</p>	<p>The two issues raised by the UKHSA during the statutory consultation are addressed in response to the following Written Questions:</p> <ul style="list-style-type: none"> <li>• Generation of impurities and periodic venting emissions – this point is answered in relation to WQ1.2.3</li> <li>• EMF – this point is answered in response to WQ1.2.11</li> </ul> <p>It is confirmed that the Environmental Statement complies with the relevant EIA Regulations</p>
1.1.21	Applicant	<p><b>Shut Down</b></p> <p>If the pipeline has to shut down, what are the knock-on effects for the businesses that feed into the pipeline? Do they have to stop, or can they continue operating with their emissions being vented/released at source? Or would there be capacity to store a certain amount of collected emissions at the IAGI? Explain.</p>	<p>In the unlikely event of a shutdown to the Viking CCS Pipeline system there is an expectation that the emitters feeding into the system would be able to continue operating by releasing CO<sub>2</sub> at source.</p> <p>There are no plans to store CO<sub>2</sub> at the Immingham Facility.</p>
1.1.22	Applicant	<p><b>Corner Farm</b></p>	The Applicant is highly experienced in health and safety management and takes very seriously its legal duty under the UK's Health and Safety at Work Act to protect workers and the public from its activities. The Applicant places the utmost importance on the safety

ExA-Q.1.1	Question to	Question	Applicant response
		<p>The ExA notes concerns that a routeing change near Grimoldby has placed several dwellings in a perceived 'dangerous' proximity to the pipeline [RR-089].</p> <ol style="list-style-type: none"> <li>1) Please explain fully what factors were taken into account in determining the pipeline route (and its alterations) where residential properties were nearby.</li> <li>2) Was a safety distance a defining factor at any stage?</li> <li>3) If such 'dangerous' zones do exist (i.e., blast zone) for a certain width alongside the pipeline corridor, how would this impact upon or constrain the limits of lateral deviation sought by the Applicant?</li> <li>4) Following the response to item 3, if there are instances where working widths would be constrained and pipeline routeing excluded, could these be shown on an illustrative drawing?</li> <li>5) Following the response to item 3, if there are areas where development would be precluded from the Order limits due to health and safety concerns, would the Applicant commit to an article or requirement in the DCO confirming no work within such margins shall take place?</li> </ol>	<p>of the communities it interacts with, its employees and its contractors who will work on the Proposed Development.</p> <p>With reference to questions 1 and 2, several important factors were considered in routeing the pipeline. These were the safety of local communities, avoiding built up areas and sensitive buildings, areas protected for their habitat and species, the Lincolnshire Wolds Area of Outstanding Beauty, areas that are liable to flood and historic monuments.</p> <p>The pipeline has been designed in compliance with Engineering Standard BSI PD 8010-1:2016, which makes specific provision for CO<sub>2</sub> pipelines and the approach to routeing including minimum distances to buildings. In addition, the pipeline has been designed in accordance with the established principle of ALARP (<i>"As Low As Reasonably Practicable"</i>), as described in the Health and Safety Executive's (HSE's) longstanding framework document <i>"Reducing Risks, Protecting People."</i> The purpose of ALARP is to ensure risks are reduced as far as is reasonably practicable.</p> <p>The Applicant has referenced the HSE's Tolerability of Risk framework (which is defined in the <i>'Reducing Risks, Protecting People'</i> framework document mentioned above) to assess the pipeline risks. This assessment shows that the risk to members of the public living near to the Viking CCS pipeline route is well within the framework's lowest classification of risk. Under the framework, the HSE considers that <i>"risks falling into this region are generally regarded as insignificant and adequately controlled."</i></p> <p>The Health and Safety Executive does not usually require further action to reduce risks in this lowest classification unless reasonably practicable measures are available, such as developing comprehensive emergency response plans. The Applicant will work with all relevant local authorities to develop such plans.</p> <p>The Applicant has engaged with the HSE, including their science division, to seek their expert opinion on the pipeline design and associated risk assessments. The Applicant has also engaged with other industry experts and will continue to engage both regulator and industry experts throughout the pipeline design and subsequent operation.</p> <p>The Applicant has adopted a robust design and route selection process for the Proposed Development, with safety of local communities being a key consideration. The routeing and design accords with adopted guidance, including on managing risk, and has been informed by advice from experienced technical consultants.</p> <p>With reference to Points 3,4, 5, the Applicant has designed the pipeline in compliance with Engineering Standard BSI PD 8010-1:2016, which makes specific provision for CO<sub>2</sub> pipelines and the approach to routeing including minimum distances to buildings. As the pipeline is fully compliant with these guidelines there are no instances where working widths would be constrained.</p>
1.1.23	Applicant	<p><b>Fractures</b></p> <p>If a fracture in the Proposed Development occurred, either within the proposed 24" pipeline or within the existing 36" pipeline, what would be the emergency procedures and who would be notified?</p>	<p>Project specific emergency procedures will be developed in line with the Harbour Energy HSES management systems to ensure adequate planning and preparation is in place in the event of an incident occurring. This will include actions to be taken by emitters.</p> <p>The Harbour HSES management system states the following:</p> <p><i>"Harbour Energy shall develop and maintain a Crisis Management Procedure (CMP) that clearly defines the mobilisation of personnel, response structure, roles and responsibilities, facilities, equipment, lines of communication and the interface with support teams."</i></p> <p>The same document further states that</p> <p><i>"Business Units shall ensure that all their operating assets/hubs, bases and offices have an</i></p>

ExA-Q.1.1	Question to	Question	Applicant response
			<p><i>approved site-specific Emergency Response Plan (ERP). As a minimum they shall include:</i></p> <ul style="list-style-type: none"> <li>• <i>Identified and recorded credible emergency scenarios incorporating the Major Accident Hazards (MAH)</i></li> <li>• <i>Prompts, by means of checklists/flowcharts and documented information, for response personnel to respond to each scenario</i></li> <li>• <i>Clearly defined response team roles and responsibilities, and associated command and control processes</i></li> <li>• <i>Interface arrangements with relevant Harbour Energy response teams and external emergency services</i></li> <li>• <i>Emergency contact details.</i></li> </ul> <p>Coordination with external emergency response agencies will be key to the response to an emergency event. The external emergency response organisation will typically comprise:</p> <ul style="list-style-type: none"> <li>• The local emergency services (Fire and Rescue Service, Ambulance Service and Police); and</li> <li>• Local authorities.</li> </ul> <p>The detail on roles and responsibilities including contact details, locations and leads will be outlined to address appropriate response if there is an emergency or major incident.</p> <p>Further detail is provided in paragraphs 19.8.5 to 19.8.10 of ES Chapter 19: Major Accidents and Disasters <b>[APP-061]</b>.</p>
1.1.24	Applicant	<p><b>Public safety</b></p> <p>Can it be explained why the choice of pipeline material/ thickness is considered to be a betterment of traditional pipeline construction methods when it comes to public safety?</p>	<p>The Applicant has designed the pipeline in compliance with Engineering Standard BSI PD 8010-1:2016. However, the Applicant has elected to exceed the design requirements set by the standard. This includes taking a conservative approach with thick wall design across the full pipeline length. The utilisation of thick wall pipe will increase the integrity of the pipeline to withstand accidental third-party impact. It should be noted that the proposed burial depth of the pipeline will further minimise this risk.</p>
1.1.25	UK Health Security Agency	<p><b>As low as reasonably practical</b></p> <p>With regards to potential major hazards and accidents [APP-061] can you confirm whether or not the Applicant has done enough to ensure that all risks are managed and mitigated to a point where they are as low as reasonably practical?</p>	
1.1.26	Applicant	<p><b>Gas pressures</b></p> <p>When the safety and suitability assessments were carried out for the Lincolnshire Offshore Gas Gathering System (LOGGS), were they done on the basis of the gas pressure (barg) of the Proposed Development? If so, how does that pressure compare with the previous barg when the LOGGS was operational?</p>	<p>The safety and suitability assessments carried out on the LOGGS pipeline were completed on a range on pressures from 130.4 barg up to 150 barg. This range covers the original design pressure of the LOGGS pipeline up to the proposed operating pressure of the Proposed Development. Further information is contained in the Technical Note – Repurposing and Life Extension Assessment summary for the LOGGS pipeline <b>(EN07008/EXAM/9.15)</b>.</p>
1.1.27	Applicant	<p><b>Other Gases</b></p> <p>The industrial premises in Immingham are likely to produce gases other than carbon dioxide at source. In respect of these:</p> <p>1) how will the Proposed Development, where it connects to these industries, filter out these gases or prevent them entering the system?</p>	<p>1) Pipeline systems have strict entry requirements and the composition of CO<sub>2</sub> entering the Viking CCS pipeline will be continually monitored to ensure it meets the agreed specification. All potential connectors into the Proposed Development are designing their equipment to comply with the prescribed Viking CCS entry specification.</p> <p>2) A robust, safe, pipeline operating envelope has been defined via the control of the Viking</p>

ExA-Q.1.1	Question to	Question	Applicant response
		<p>2) would there be an immediate shutdown procedure should a foreign gas (i.e.; ammonia) entered into the system?</p> <p>3) what could the repercussions be if such gases were to become pressured within the Proposed Development?</p> <p>4) could the Proposed Development be modified, either at the construction stage or during operation, to collect and transport methane?</p> <p>5) if foreign gases are being collected at source but then expelled or released at the IAGI intake facility, should these not feature as a waste product/ waste effect arising from the Proposed Development?</p>	<p>CCS CO<sub>2</sub> specification. Viking CCS shall control the entry specification of CO<sub>2</sub> from emitters by way of approval of the emitter project metering and verification equipment and plans. Viking CCS shall be able to shut in any emitters that cannot meet the specification for entry to the Viking CCS system and have appropriate monitoring in place to assure that CO<sub>2</sub> entering the network meets the defined specification.</p> <p>3) As set out in answer 2 above, the Applicant would have the ability to shut off any emitters to prevent any gases entering the system that could have negative repercussions.</p> <p>4) The Applicant has not considered the re-purposing of the Proposed Development for methane. Article 4(2) of the draft DCO <b>[AS-040]</b> expressly authorises the proposed development for the transport of carbon dioxide. The Applicant would need to obtain new consents to use it to transport methane.</p> <p>5) The Proposed Development is part of a CO<sub>2</sub> Transportation and Storage project therefore any potential foreign gases will be handled by the emitters and will not be expelled or released at the IAGI facility. All potential connectors into the Proposed Development are designing their equipment to comply with the prescribed Viking CCS entry specification.</p>
1.1.28	Applicant	<p><b>Nitrogen</b></p> <p>It is noted an intention that nitrogen gas bottles would be sourced to allow the purging of the pig launcher, analysers and sample points. Where would these be stored and how would they be secured to avoid danger of explosion, leaks or any other risks?</p>	<p>The requirement for nitrogen for purging is still to be determined; however, if it is required then the bottles will be stored in secured cabinets within the analyser houses (shown on the indicative site layout drawings) to avoid the risks suggested. If required for pig launcher purging, then the required gas bottles would be brought to site at the time given the infrequent nature of the operation.</p> <p>Please refer to Figure 3-6 and Figure 3-24 in ES Chapter: Description of the Proposed Development <b>[APP-045]</b>.</p>
1.1.29	Applicant	<p><b>Conoco Landfill</b></p> <p>Explain what effects, if any, there would be on the former landfill site known as 'Conoco' now that the change request has been sought.</p>	<p>As a result of the Applicant's Change Request dated 19 March 2024 <b>[AS-038 to AS-054]</b> there would no longer be any potential interaction with either part of the Conoco landfill (site 55/19/0148, 1480, 2000/5295 and 55/19/0148, 1480, 2000/5296) as these were in the section proposed to be removed from the Order Limits.</p>



**Table 2: Q1.2 Air Quality and Emissions**

ExA-Q.1.2	Question to	Question	Applicant response
<b>Air Quality Management</b>			
1.2.1	Applicant	<p><b>Air Quality during operation</b></p> <p>The ES [APP-056] [APP-057] [APP-059] and general application documents refer to the requirement to vent an unquantified amount of carbon dioxide (CO<sub>2</sub>) during maintenance. There is also a noted requirement in paragraph 3.9.4 of the ES [APP-045] to undertake atmospheric dispersion modelling to determine the required height of the stacks for venting of larger volumes of CO<sub>2</sub> (either to confirm use of the current design of up to 25m or requiring additional temporary structures of up to 50m). It is therefore not clear how the acknowledged requirement to undertake dispersion modelling to avoid risks to human health is compatible with the Applicant scoping out human health risk from venting operations, or why there is a requirement for a stack height of up to 50m other than referring to "larger volumes of CO<sub>2</sub>". The ES also refers to the following [APP-056]:</p> <ul style="list-style-type: none"> <li>Paragraph 14.3.9 states "At the PEIR stage, it was stated that once more was known about the venting, that this would be discussed at the ES stage. More information is now known about the venting system, and this will only comprise of CO<sub>2</sub> emissions which will not directly impact human health. Therefore, the impacts from the emissions from venting the pipeline have not been considered within this assessment"; and</li> <li>Paragraph 14.7.40 "It should also be noted that routine emissions from the venting system will not be directly harmful to human health or ecologically sensitive receptors and have not been included within this assessment".</li> </ul> <p>Based on the information available within the Scoping Report [APP-074], the Inspectorate agreed to scope out operational emissions from all sources. However, the matter of additional dispersion modelling for temporary vents does not appear to have been referred to within the scoping report on which the scoping opinion was based, and nor was the scale of venting operations, and the Scoping Opinion [APP-075] entry 3.7.2 "advises that a periodic review is made as further information becomes available about the Proposed Development and in response to the outcomes of consultation with stakeholders. The ES should include account of the approach taken, including all relevant supporting evidence of the absence of a pathway(s) for likely significant effects to occur".</p> <p>In light of new information being provided on the temporary venting facilities and additional modelling (that was not provided at scoping), the Applicant is requested to provide additional information on the methodology associated with the assessment air quality impacts of venting of planned, emergency and fugitive emissions. The response should include information on:</p> <ul style="list-style-type: none"> <li>Why there is a requirement for additional atmospheric modelling and a potential stack height of up to 50m (as per paragraph 3.9.4);</li> <li>Details of the likely constituents, volume and duration of any emissions</li> </ul>	<p>1) As set out in paragraph 5.11.2 of ES Chapter 5: Environmental Impact Assessment (EIA) Methodology [APP-047], the general approach adopted within the assessment was to apply reasonable worst-case assumptions regarding construction, operation and decommissioning of the Proposed Development. This includes adopting a worst-case set of parameters for any infrastructure forming part of the Proposed Development, which may be refined down as part of the detailed design process.</p> <p>At this stage, the detailed design of the vent has not been completed. The Applicant has therefore assessed what it considers to be a reasonable worst-case, that is a 25m permanent vent stack, and the potential for a temporary 50m vent stack in certain circumstances, as required to allow suitable venting of the Proposed Development in a manner that would avoid any significant environmental effects.</p> <p>As part of the detailed design process for the vent stack, the Applicant will undertake additional atmospheric modelling based on the proposed detailed design of the Proposed Development as a whole. That will inform the ultimate design, including height and whether there is any need for a temporary 50m stack in certain circumstances. If the permanent 25m stack can be built to a lower height whilst still avoiding any potentially significant environmental impacts, then the Applicant may choose to do so, as this would reduce other potential impacts (e.g. landscape and visual). Until the detailed design is complete, the Applicant has sought consent through the DCO for a reasonable worst-case size for the permanent vent stack.</p> <p>2), 3) and 4) Venting requirements will be confirmed as part of the detailed design process. Any venting that does take place will comply with any prevailing legislation and associated guidance in place at that time (e.g. the Control of Substances Hazardous to Health Regulations 2002 relating to exposure of employees to hazardous substances, such as CO<sub>2</sub>). The Applicant has also committed to operational mitigation through the ES- Volume IV – Appendix 3-6: Operational Phase Mitigation [APP-073] with commitment Op17 stating:</p> <p>"The venting of CO<sub>2</sub> will be undertaken at a rate whereby the noise at the nearest Noise Sensitive Receptor will be no greater than 10db above daytime background levels, which are 51 dB at Immingham and 38 dB at Theddlethorpe. These levels will be back calculated to the perimeter of the facility and monitored as such."</p> <p>Compliance with that commitment is secured through requirement 15 of the Draft DCO. Through compliance with relevant legislation, associated guidance and operational mitigation measures, any potential adverse effects on human and ecological receptors would be avoided.</p> <p>The Applicant will provide a technical note with an estimate of venting requirements at all locations, including venting noise, vent emissions, timings and notifications.</p>

ExA-Q.1.2	Question to	Question	Applicant response
		<p>during all phases with details of how a worst case has been defined (as per paragraph 14.3.9);</p> <ul style="list-style-type: none"> <li>Evidence of whether the constituents are likely to result in adverse effects on human and ecological receptors; and</li> <li>Where there is the potential for an adverse effect, the methodology and findings of the assessment to determine whether there is the potential for a significant effect based on the current parameters established within the draft DCO, and where necessary informed by dispersion modelling.</li> </ul>	
1.2.2	Applicant	<p><b>Air Quality during decommissioning</b></p> <p>Paragraphs 14.3.9 and 14.7.41 [APP-056] states that “<i>All effects relating to the decommissioning of the Proposed Development are scoped out as this would not require extensive ground works or vehicle movements of a scale sufficient to trigger a detailed air quality assessment</i>”. It is however not clear if this information has been provided for the final venting of the system prior to decommissioning, in line with the question above. The Applicant is therefore requested to provide additional methodological information in relation to the absence of an assessment of decommissioning works.</p>	<p>Requirement 16 of the Draft DCO [AS-040] requires the undertaker to submit to the planning authority for approval a decommissioning environmental management plan. Note that an updated version (Revision C) of the Draft DCO has been submitted at Deadline 1 (<b>document reference 2.1</b>). The approved plan must thereafter be implemented. As set out in paragraph 2.1.4 of the ES – Volume IV Appendix 3-5: Draft Decommissioning Strategy [APP-072], the plan will include provision for the final venting of the Proposed Development to ensure safe dispersion of material. The Applicant considers that this provides an adequate control on future methodology, which will be based on best practice at the time of decommissioning.</p> <p>As with venting during maintenance, the venting rate during decommissioning would be based upon dispersion modelling of the CO<sub>2</sub> inventory present at the time of decommissioning. The rate of venting would be managed to ensure there would be no possibility of risks to human or ecological receptors and no risk of generating significant noise or other environmental effects.</p>
1.2.3	Applicant	<p><b>Odour during operation</b></p> <p>In relation to scoping out of odour from operational emissions, the ES appears to rely on the statement in paragraph 3.9.5 [APP-045] which states that “Based on feedback from the current potential emitters, it is not anticipated that the CO<sub>2</sub> entering the Viking CCS Pipeline will contain any Hydrogen Sulphide (H<sub>2</sub>S)”.</p> <p>There is currently limited information on the confirmed emitters who will utilise the pipeline, and therefore it is not clear how this information can be relied on. The Applicant is requested to provide additional information on the methodology associated with the assessment of odours, given the absence of confirmed emitters who will connect into the pipeline, and additional justification as to the criteria used to be able to scope this matter out, as it is noted that paragraph 16.6.5 of the Scoping Report refers to the requirement to assess odours in relation to human health.</p>	<p>The Applicant has set out in its response to WQ1.1.27 how it would be able to control the specification of gases entering the system. A description of how venting would be controlled is also contained in WQ1.2.1.</p> <p>The Applicant considers that these controls are sufficient to allow potential odour impacts to be excluded.</p>
1.2.4	Applicant	<p><b>Nitrogen oxide</b></p> <p>The gases listed [APP-056, Paragraph 14.4.13] does not identify nitrogen oxide (NO<sub>x</sub>). Is there a reason for this?</p>	<p>The sentence should have been worded as follows:</p> <p><i>“Emissions from construction-related Non-Road Mobile Machinery (NRMM) and site plant will have the potential to increase <b>NO<sub>x</sub> (and NO<sub>2</sub>)</b>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations at locations close to working areas of the site.”</i></p>

ExA-Q.1.2	Question to	Question	Applicant response																																		
1.2.5	Local Authorities	<b>Air Quality Management Areas (AQMAs)</b> Can the relevant Local Authorities confirm whether, as a result of the Proposed Development on its own or cumulatively with other projects, there would be any adverse impacts on air quality within the nearest AQMAs?																																			
1.2.6	Local Authorities	<b>Air Quality</b> Are there any concerns regarding the residual air quality effects predicted by the Applicant and, if so, what specifically needs to happen in order to resolve the issues?																																			
1.2.7	Local Authorities	<b>Dust Control</b> Are there any comments on Construction Dust Emissions mitigation/CEMP/Construction Monitoring commitments?																																			
1.2.8	Local Authorities	<b>Air Pollution/Odour Mitigation</b> Are IPs satisfied with the monitoring/mitigation measures proposed by the dDCO that deal with air pollution/emissions and potential odour issues?																																			
1.2.9	Applicant	<b>Impact of construction traffic on air quality</b> The ES states that construction traffic will cause IAQM and DMRB screening criteria to be exceeded. No assessment of the impacts of this appear to have taken place. Please provide appropriate assessments of potential significant effects on air quality.	<p>According to the IAQM planning guidance the screening criteria set out in that guidance are “precautionary and should be treated as indicative”. The guidance states that they “function as a sensitive ‘trigger’ for initiating an assessment in cases where there is a possibility of significant effects arising on local air quality”.</p> <p>It is the Applicant’s opinion that where traffic impacts exceed the IAQM screening criteria, as listed in the ES Volume II Chapter 14: Air Quality [APP-056], there is <b>no</b> possibility of a significant air quality effect arising.</p> <p>For an impact to have a potential significant effect, the IAQM suggest the following for describing the impact at individual receptors.</p> <p><b>Table 6.3: Impact descriptors for individual receptors.</b></p> <table border="1"> <thead> <tr> <th rowspan="2">Long term average Concentration at receptor in assessment year</th> <th colspan="4">% Change in concentration relative to Air Quality Assessment Level (AQAL)</th> </tr> <tr> <th>1</th> <th>2-5</th> <th>6-10</th> <th>&gt;10</th> </tr> </thead> <tbody> <tr> <td>75% or less of AQAL</td> <td>Negligible</td> <td>Negligible</td> <td>Slight</td> <td>Moderate</td> </tr> <tr> <td>76-94% of AQAL</td> <td>Negligible</td> <td>Slight</td> <td>Moderate</td> <td>Moderate</td> </tr> <tr> <td>95-102% of AQAL</td> <td>Slight</td> <td>Moderate</td> <td>Moderate</td> <td>Substantial</td> </tr> <tr> <td>103-109% of AQAL</td> <td>Moderate</td> <td>Moderate</td> <td>Substantial</td> <td>Substantial</td> </tr> <tr> <td>110% or more of AQAL</td> <td>Moderate</td> <td>Substantial</td> <td>Substantial</td> <td>Substantial</td> </tr> </tbody> </table> <p>The effect and its significance are then determined by professional judgement, taking account of how many receptors are affected by each impact descriptor, the current risk and future risk of an air quality standard being exceeded, and other factors, such as the duration of increased exposure.</p> <p>Table 14-11 of ES Chapter 14: Air Quality [APP-056] demonstrates the baseline air quality in the vicinity of the Proposed Development. The monitoring has been undertaken by the Local Authorities and represent background and roadside locations. Except for monitoring undertaken within the Cleethorpes Air Quality Management Area, annual mean nitrogen dioxide (NO<sub>2</sub>) concentrations are 75% or less of the air quality objective.</p>	Long term average Concentration at receptor in assessment year	% Change in concentration relative to Air Quality Assessment Level (AQAL)				1	2-5	6-10	>10	75% or less of AQAL	Negligible	Negligible	Slight	Moderate	76-94% of AQAL	Negligible	Slight	Moderate	Moderate	95-102% of AQAL	Slight	Moderate	Moderate	Substantial	103-109% of AQAL	Moderate	Moderate	Substantial	Substantial	110% or more of AQAL	Moderate	Substantial	Substantial	Substantial
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ExA-Q.1.2	Question to	Question	Applicant response
			<p>This suggests that even a change in annual mean concentration of NO<sub>2</sub> of up to 25% of the air quality objective (10 µg/m<sup>3</sup>) would not cause an exceedance of that objective.</p> <p>It is the Applicant's opinion that the traffic impacts reported in Table 14-17 of ES Chapter 14: Air Quality [APP-056] are not capable of increasing annual mean NO<sub>2</sub> concentrations by anything like that required to cause 'moderate' or 'substantial' impacts, as described by the IAQM. The temporary nature of the traffic impacts only goes to strengthen this opinion.</p> <p>However, the Applicant has decided to undertake modelling of some of the higher trafficked routes to demonstrate that there is not potential for significant effects and will provide the results of this modelling work at Deadline 3.</p> <p>It should be noted that traffic impacts on the A180 (through the AQMA) do not exceed the air quality screening criteria set out in the IAQM guidance. It should also be noted that whilst the ES Chapter 14: Air Quality [APP-056] does refer to the DMRB air quality screening criteria, it does so only for the purpose of informing the ecology assessment.</p>
<b>Impacts on human health</b>			
1.2.10	Applicant	<p><b>Venting conditions</b></p> <p>Neither the ES [APP-057] nor the Habitats Regulations Assessment (HRA) [AS-026] tackle the issue of venting and the climatic conditions in which this could take place. Whilst common sense that venting in a strong wind would result in gas emissions being diluted and transported rapidly from source, venting in still or foggy conditions may result in less of a dispersal with potential for air to sink. Can the Applicant set out their thoughts on this and whether general venting (as opposed to emergency venting) should only be undertaken in certain climatic conditions?</p>	<p>As part of the detailed design process for the vent stack, the Applicant will undertake additional atmospheric modelling based on a range of atmospheric criteria and the proposed detailed design of the Proposed Development as a whole.</p> <p>Through compliance with relevant legislation, associated guidance and operational mitigation measures, any potential adverse effects on human and ecological receptors would be avoided.</p>
1.2.11	Applicant	<p><b>Electro-Magnetic Fields (EMF)</b></p> <p>The UK Health Security Agency has requested that EMF is assessed. Provide the necessary assessment or provide detailed explanations as to why this is not required.</p>	<p>The former Department for Energy and Climate Change (DECC, now Department for Energy Security and Net Zero) Voluntary Code of Practice on compliance with EMF guidelines, states the following:</p> <p><i>"The Energy Networks Association will maintain a publicly available list on its website of types of equipment where the design is such that it is not capable of exceeding the ICNIRP exposure guidelines, with evidence as to why this is the case. Such types of equipment are likely to include:</i></p> <ul style="list-style-type: none"> <li>• overhead power lines at voltages up to and including 132 kV</li> <li>• underground cables at voltages up to and including 132 kV</li> <li>• substations at and beyond the publicly accessible perimeter</li> <li>• Compliance with exposure guidelines for such equipment will be assumed unless evidence is brought to the contrary in specific cases"</li> </ul> <p>Paragraphs 17.7.66 to 17.7.70 in ES Chapter 17: Health and Wellbeing [APP-059] assess the potential for EMF effects, citing the above DECC guidance. With reference to this guidance, paragraph 17.7.70 of ES Chapter 17 Health and Wellbeing [APP-059] confirms that:</p> <p><i>"The design of the Proposed Development does not include either high-voltage underground cables or overhead line cables within its design. As a result, there will be no effect during all stages of the Proposed Development arising in respect of human health and wellbeing in relation to EMF."</i></p>

**Table 3: Q.1.3 Strategic Alternatives**

ExAQ1.3	Question to	Question	Applicant response
<b>Strategic Alternatives</b>			
1.3.1	Applicant	<p><b>Routeing principles</b></p> <p>In paragraph 2.4.1 of ES Chapter 2 [APP-044] it states: <i>"The main objective underpinning the development of the new onshore Viking CCS Pipeline was to create a linkage between CO<sub>2</sub> emitters in the Humber industrial area to the north of Immingham, to the existing Lincolnshire Offshore Gas Gathering System (LOGGS) Pipeline at Theddlethorpe; thus, there are defined start and end points."</i></p> <p>Can the Applicant explain what other options were considered other than connecting to the LOGGS pipeline (i.e.; why was the connection at Theddlethorpe a defined end point at the start of the process and not, for example, the Endurance pipeline and terminal)?</p>	<p>As set out in ES Chapter 1: Introduction [APP-043], ES Chapter 2: Design Evolution and Alternatives [AS-021] and the Bridging Document [APP-128], the intention of the wider Viking CCS Project is to facilitate the transport of compressed and conditioned carbon dioxide from emitters to be stored in depleted gas reservoirs in the Southern North Sea. Those depleted 'Viking' gas fields have been independently verified as having world class storage potential, with the capacity to store up to 300 million tonnes of CO<sub>2</sub>. In September 2023, the Applicant was granted three carbon storage licences by the North Sea Transition Authority (CS005, CS023 and CS024) in respect of these depleted gas fields. Copies of those licences are included at Appendix D of this document.</p> <p>The existing LOGGS pipeline terminates in the marine environment very close to the existing gas fields. Repurposing this existing pipeline for use for carbon storage was identified as a key environmental and financial benefit for the Viking CCS Project. It means that no works are required in the intertidal area, avoiding potential impacts on the designated sites, including the Greater Wash SPA, Humber Estuary SAC and the Saltfleetby-Theddlethorpe Dunes SAC. By re-using the LOGGS pipeline, no works are required in the marine environment until approximately 118km offshore, where the LOGGS pipeline ends.</p> <p>For that reason, connecting emitters to the LOGGS pipeline is a key aspect of the Viking CCS Project, and is the main objective of the Proposed Development. Connecting to the Endurance pipeline and terminal, for example, would not achieve this purpose and is therefore not an alternative to the Proposed Development and consequently has not been considered further.</p> <p>ES Chapter 2: Design Evolution and Alternatives [AS-021] sets out a summary of the alternatives considered by the Applicant to achieve the objectives of the Proposed Development.</p>
1.3.2	Applicant	<p><b>LOGGS pipeline longevity</b></p> <p>The LOGGS pipeline is said to have been constructed in 1998 [AS-013, paragraph 6.1.15] and the Applicant has stated several assessments were undertaken on its current condition (fracture assessment, integrity assessment, CO<sub>2</sub> corrosion assessment). Can copies of these assessments be provided to the Examination, together with reasons why the Applicant considers the LOGGS pipeline would be safe and suitable for the 25-40 year lifetime of the Proposed Development when it is already approximately 25 years old?</p>	<p>An in-depth engineering assessment has been completed to evaluate the technical suitability to repurpose the pipeline and extend the life of the pipeline, this has been summarised in "Technical Note – Repurposing and Life Extension Assessment summary for the LOGGS pipeline" (EN070008/EXAM/9.15), which has been submitted at Deadline 1.</p> <p>The assessment has evaluated:</p> <ul style="list-style-type: none"> <li>• The internal and external condition of the pipeline;</li> <li>• The material properties of the pipeline;</li> <li>• The welding used in original construction;</li> <li>• The suitability for transport of dense phase CO<sub>2</sub> as the fluid within the pipeline; and</li> <li>• The time-dependent damage mechanisms that could impact the life extension.</li> </ul> <p>It is the conclusion of the technical note that the LOGGS pipeline is suitable for reuse and life extension.</p>

ExAQ1.3	Question to	Question	Applicant response
<b>Project Alternatives</b>			
1.3.3	Applicant	<p><b>Theddlethorpe Site Options</b></p> <p>a) Paragraph 2.9.7 of ES [APP-044] states that five alternative sites were considered for the location of the TAGI (further to option 1 of building on the existing gas terminal site). Provide a map showing the locations of these alternatives and provide a table showing the scoring matrix that led to the decision to include Option 2 only in the dDCO [AS-008], including providing the technical note referred to in paragraph 2.9.7 [APP-044].</p>	<p>The Applicant has provided both the decision matrix and the map showing the locations of the alternative sites for the Theddlethorpe AGI in Appendix E of this document.</p> <p>The document referenced was a summary of a wider discussion that was used for internal, early design purposes. The decision matrix is a simple Red, Amber, Green assessment of each of the site options against given criteria and the decision itself was based on professional judgement informed by that matrix.</p> <p>The Applicant will prepare a technical note summarising its decision-making process for the location of TAGI Option 2 and submit this at Deadline 2.</p>
1.3.4	Applicant	<p><b>Block Valve Stations (BVS)</b></p> <p>The rationale behind BVS locations is set out in paragraphs 2.9.10 to 2.9.13 respectively [APP-044]. However, it does not give justification for the number or frequency of the BVS along the route (i.e., why two stations further apart would not work or why the broadly 13 kilometre (km) distance between the BVS is needed). Provide further reasoning behind these design choices.</p>	<p>PD 8010 provides no stipulation on block valve sites spacing, therefore further guidance was sought from the Canadian pipeline standard CSA-Z662-7. This standard considers Block Valve Stations (BVS) for CO<sub>2</sub> pipelines should typically be no further than 15km apart. Therefore, under this guidance, three block valves was considered optimal for the length of the Viking CCS pipeline.</p> <p>The locations selected have taken into account the topography of the land, ease of access from a public highway for inspection and maintenance purposes, proximity to occupied buildings and consideration of existing environmental constraints.</p> <p>Further information on the selection of the chosen BVS locations is provided in response to WQ1.3.5.</p>
1.3.5	Applicant	<p><b>BVS location decision</b></p> <p>Paragraph 2.9.13 [APP-044] states the three final preferred locations for the BVS. However, other than the geographic distance away from the IAGI, it appears no other design or environmental criteria were applied in deciding the locations of the BVS. Can the Applicant explain:</p> <ol style="list-style-type: none"> <li>1) what other locations at the broad 13km intervals were assessed for potential BVS siting (a map may be a suitable means of presentation);</li> <li>2) why other alternatives and options for BVS locations in the 13km proximity were discounted or not pursued;</li> <li>3) why the BVS locations selected represented the best environmental and technical locations; and</li> <li>4) how has mitigation by design influenced the final selections of the BVS locations?</li> </ol>	<p>With reference to points 1) and 2): As outlined in WQ 1.3.4, three BVS's were identified as the optimum number required.</p> <p>The location of the first BVS (Washingdales Lane) was initially considered on the north or south sides of A18 Barton Street between Riby and Aylesby. Access to the north side would have been from a public layby, whilst the south side was directly off the A18. The final option on Washingdales Lane is beside the existing Anglian Water facility, discreetly located off the main public highway with an existing major road junction available on the A18.</p> <p>The location of the second BVS (Thoroughfare) was considered on either the north or south side of Thoroughfare. A location on the north side was not practical due to the presence of an 11KV overhead electrical line. Moving further north brought the BVS close to populated areas and the Area of Outstanding Natural Beauty. To the south, the next convenient site was Grainsby Lane which would not be acceptable given access restrictions.</p> <p>The location of the third BVS (Louth Road) was selected based upon good access, remote location and the correct spacing. The next nearest locations to the north or south would have been approximately 2km away and would have therefore been inconsistent with the guidance on block valve spacing.</p> <p>With reference to point 3): The locations selected take into account the topography of the land, ease of access from a public highway for inspection and maintenance purposes, the proximity to occupied buildings and local communities, and existing environmental</p>

ExAQ1.3	Question to	Question	Applicant response
			<p>constraints. The locations were reviewed by the environmental disciplines and no constraints were identified that would have needed a change of location. The findings of the EIA, as reported in the ES, confirm that the locations do not result in any significant environmental impacts. This included reviewing key constraints to siting, in particular the need to site outside of the AONB and protected sites such as SSSIs, whilst also taking into consideration the local ecological conditions associated with each individual site.</p> <p>With reference to point 4): Mitigation by design is typically used to avoid the potential for significant environmental effects at the routeing and siting stage. This is usually undertaken through a siting study at the early stages of a project's development, when information about various environmental, socio-economic and technical constraints are identified, and constraints mapped. For the Proposed Development, at the stage the BVSs were being sited the project had a great deal of constraints information, having been through the EIA Scoping stage and having undertaken non-statutory consultation. The sites were therefore identified with a full knowledge of the prevailing environmental constraints.</p> <p>When the site options were identified the site proposals were shared with the various EIA topic leads working on the project. None of the sites was considered to have any issues that would make them unsuitable for the Proposed Development.</p>
1.3.6	Applicant	<p><b>Block Valve Station proportions</b></p> <p>The ExA note from the Statement of Reasons (SoR) [AS-013, Paragraphs 6.1.8 - 6.1.10] that the northernmost BVS is said to have a permanent land take of 43x38m. However, the other two block valve stations are said to require 50x40m area each. Why is there this difference and why cannot the smaller BVS model be applied consistently across the scheme?</p>	<p>The BVS footprints have now been confirmed to be the same, smaller, size which is approximately 43m x 38m. Please refer to plans referenced below:</p> <p><b>[APP-027]</b> - Washingdales Lane Block Valve Station Plan and Elevations;</p> <p><b>[APP-028]</b> - Thoroughfare Block Valve Station Plan and Elevations; and</p> <p><b>[APP-029]</b> - Louth Road Block Valve Station Plan and Elevations.</p>
1.3.7	Applicant	<p><b>Routeing choices</b></p> <p>Under the bullets in paragraph 2.10.1 [APP-044] it is stated the DCO Order Limits were drafted specifically to include 'Electricity Connections Distribution Network Operator's existing network.' In all the previous optioneering discussions and assessments referred to in the ES, this has not been flagged as a priority or guiding principle.</p> <p>1) Why were the Order Limits deliberately designed to incorporate such infrastructure?</p> <p>2) What influence did accessibility to such infrastructure have over the pipeline corridor routeing selection?</p>	<p>1) An electrical connection is required to provide power to the facilities at Immingham, Theddlethorpe and the three block valve locations. Following consultation with the Local Distribution Network Operator the nearest location for an electrical connection to each facility was identified and the order limits drafted to ensure that a connection can be made.</p> <p>2) It was considered that the works required to connect to the local electrical network are both relatively minor and temporary and therefore this had minimal influence whilst considering the siting of permanent above ground infrastructure.</p>
1.3.8	Applicant	<p><b>Construction compound choices</b></p> <p>A total of 14 construction compound locations are purported to have been assessed [APP-044, Paragraph 2.9.14]. The ES states: "<i>The selection of the preferred construction compounds was made with due consideration to the initial analysis work that had been undertaken, along with further consideration about how accessible the sites were in relation to the DCO Site Boundary and how impacts could be minimised where possible by choosing locations closer to the pipeline construction corridor.</i>"</p>	<p>1) Locations for potential construction compounds were initially screened following a search of three land classifications within the local area</p> <ul style="list-style-type: none"> <li>• Brownfield sites; only one suitable site was identified;</li> <li>• Vacant land as designated by North Lincolnshire Council; and</li> <li>• Greenfield sites.</li> </ul> <p>Only one potential brownfield location was identified (a disused airfield at Holton le Clay). No suitable vacant land was identified.</p>



ExAQ1.3	Question to	Question	Applicant response
		<p>In respect of this:</p> <p>1) Provide details of the initial analysis work undertaken that resulted in locations being discounted or preferred over others.</p> <p>2) The wording suggests refinements were made to the compound locations on the basis of proximity to the construction corridor. Can it be explained if impacts on communities or the landscape in anyway influenced such refinements.</p>	<p>Potential greenfield locations were identified with due regard to the following criteria:</p> <ul style="list-style-type: none"> <li>• access from major road networks;</li> <li>• travel distance to deliver pipe sections;</li> <li>• avoidance / interference to towns and villages;</li> <li>• cost incurred to reinstate the land;</li> <li>• Potential crop loss over a number of years; and</li> <li>• Potential landowner willingness to potential agreement.</li> </ul> <p>The disused airfield at Holton le clay was initially chosen as a Central construction compound as it was a brownfield site that has previously been used for construction laydown for other projects in the area. The site had good links to A Roads and was located centrally to the project.</p> <p>The Northern compound was ultimately selected as it had good transport links to A roads and close proximity to the pipeline corridor. The site is greenfield, but it was previously used as a laydown for a previous road improvement project so has some infrastructure (such as good access) that would simplify the temporary change to a construction compound.</p> <p>The small Southern compound was selected as it was on the site of the former Theddlethorpe gas terminal and therefore close to the location of Options 1 and 2 for the Theddlethorpe Facility.</p> <p>2) There are many factors that are taken into consideration in identifying options and selecting a preferred option including proximity to the construction site and road network, and avoiding potential impacts on communities, existing utilities, and protected sites and habitats.</p> <p>In terms of refining the locations this mainly related to the selection of a preferred Central compound site, options for which included the disused airfield at Holton le Clay and the proposed site adjacent to the A18. The primary use of the central compound is for the storage of pipe.</p> <p>Although the Holton le Clay site had been used before as a compound for the Hornsea project, the higher level of traffic anticipated for the Proposed Development was a concern, given the proximity of the site to the community of Holton le Clay, and the potential noise relating to decelerating and accelerating HGVs entering and leaving the compound. In addition, given its distance from the areas of pipeline construction, there would have been a need for many pipe deliveries through Waltham, New Waltham and Barnoldby le Beck. The preferred location avoided these issues, allowing the B1219 to be avoided.</p>
1.3.9	Applicant	<p><b>Design choice for pipeline dimensions</b></p> <p>The LOGGS pipeline is said to be 36" in diameter. The proposed pipeline would be 24" and would then 'tie in' with the existing LOGGS pipeline.</p> <p>1) For what technical or environmental reasons is the new pipeline proposed to be 24" and not 36"?</p>	<p>1) Preliminary study works envisaged a 20" diameter pipeline to transport between 4Mtpa and 8Mtpa of dense phase carbon dioxide from Immingham to Theddlethorpe. Following completion of these works and prior to finalisation and commitment to DCO, a sensitivity analysis of pipeline diameters (20", 24" &amp; 30") was completed that determined a 24" diameter pipeline provided the best future capacity availability whilst meeting the operational phase requirements. Based on the Humber emitters that the DESNZ may</p>



ExAQ1.3	Question to	Question	Applicant response
		<p>2) Would there not be some turbidity in the gas currents and/ or loss of pressure when the carbon dioxide switches from one pipe to another and would this impact on performance?</p>	<p>assign to the Viking CCS Pipeline a 24-inch pipeline with a design capacity of 17 million tonnes of CO<sub>2</sub> per year was regarded as optimal.</p> <p>2) There would be a very small loss of pressure associated specifically with the CO<sub>2</sub> pipeline size increase from 24" onshore pipeline to the 36" offshore pipeline, (noting that this is a hydraulic feature of all pipeline enlargements/contractions). However, this very small loss would be more than compensated for by the lower pressure drop of the 36" diameter pipeline compared to a potentially smaller diameter pipeline. Consequently, there will be no impact upon system performance.</p>
1.3.10	Applicant	<p><b>Options for connectors</b></p> <p>From the diagram [APP-044, Figure 1-2] it would appear that the northern endurance pipeline would travel towards Immingham from the west and would pass in very close proximity to Phillips 66 Limited and Immingham VPI LLP.</p> <p>1) Would that mean that the target industries for this DCO application have the option of connecting to another pipeline?</p> <p>2) If they chose to do so, would that mean, at the time of construction, the Viking CCS Pipeline would have no subscribers?</p> <p>3) It appears from the diagram that the endurance pipeline would cross the Humber Estuary before going to the Northern Endurance Gas Terminal. Was this ever considered as an alternative for the Applicant as opposed to a 55km pipeline down to Theddlethorpe?</p>	<p>By way of background to the answers below, the Applicant considers that it is worth setting out briefly the policy context for the allocation of emitters to carbon capture and storage projects.</p> <p>In its Ten Point Plan, the UK Government committed to establish four industrial clusters for carbon capture utilisation and storage. Two clusters were initially progressed through a "Track-1 process, including the East Coast Cluster that Endurance forms part of. The UK government committed to further development of carbon capture, usage and storage through the 'Track-2' process which will establish two further clusters. This will contribute to the government ambition to capture and store 20-30 million tonnes per annum of CO<sub>2</sub> across the economy by 2030.</p> <p>On 31 July 2023, the Department for Energy Security and Net Zero (DESNZ) announced that Viking CCS (plus one other) transport and storage system remained best placed to deliver government objectives for Track-2.</p> <p>Once those clusters are identified, individual emitter partners submit bids to DESNZ as part of the cluster sequencing process. This is designed to select individual carbon capture projects to then move forward to commercial negotiations for the relevant support contracts.</p> <p>DESNZ will therefore decide in due course which emitters are to be sequenced to the Viking CCS project.</p> <p>In regard to points 1) and 2) The Applicant's understanding is that none of the emitters on the South Bank of the Humber were sequenced to the Endurance project. That includes Phillips 66 and VPI Immingham, which are together progressing the Humber Zero project to reduce emissions of critical industry in the Immingham area using carbon capture.</p> <p>As outlined in the Need Case for the Scheme [APP-131] and in the representations by Phillips 66 [RR-084] and VPI Immingham [RR-115], the Applicant is working with those parties with a view to having them sequenced to the Viking CCS Project.</p> <p>The UK Government's ambition and commitment to developing carbon capture usage and storage infrastructure through the Track-1 and Track-2 process, together with the wider policy ambition to decarbonise the Humber industrial region, means that the Applicant is confident that emitters will be sequenced to the Viking CCS Project.</p>

ExAQ1.3	Question to	Question	Applicant response
			<p>3) As set out in the Applicant's response to WQ1.3.1 above, the key objective of the Proposed Development is to connect emitters to the LOGGS pipeline, which then allows onward transport of CO<sub>2</sub> offshore to a Not Permanently Attended Installation with facilities to inject the conveyed CO<sub>2</sub> into the depleted gas reservoirs (Viking gas field) under the Southern North Sea. A connection to the Endurance pipeline and the Northern Endurance Gas Terminal would not achieve that objective.</p>
1.3.11	Applicant	<p><b>Corner Farm</b></p> <p>The ExA notes concerns that a routeing change near Grimoldby has placed several dwellings in a perceived 'dangerous' proximity to the pipeline [RR-089].</p> <p>1) Please explain fully what factors were taken into account in determining the pipeline route (and its alterations) where residential properties were nearby.</p> <p>2) Was a safety distance a defining factor at any stage when considering project alternatives?</p> <p>3) If the answer to 2) above is yes, provide evidence and details accordingly.</p>	<p>There are no residential properties within the Order Limits.</p> <p>Please refer to the answer to WQ1.1.22.</p>
<b>General Considerations for Alternatives</b>			
1.3.12	Applicant	<p><b>Clarification on project</b></p> <p>In the Explanatory Memorandum [APP-007], it states that Schedule 1 sets out the authorised development for the purposes of <b>each</b> project (ExA emphasis). What does it mean by the word 'each'?</p>	<p>The reference to "each" is a typographical error and has been corrected in an updated version of the Explanatory Memorandum (Revision A) submitted at Deadline 1 <b>(document reference 2.2)</b>.</p>

**Table 4: Q.1.4 Climate Change**

ExA-Q.1.4	Question to	Question	Applicant response
<b>Assessments and Calculations</b>			
1.4.1	Applicant	<p><b>Calculations of emissions</b></p> <p>The ES [APP-057, Paragraph 15.3.6] states that greenhouse gas emissions (GHG) from electricity and fuel use from construction are omitted from the carbon calculations. In the subsequent table [APP-057, Table 15-16] there is reference to emissions from plant and enabling works, but not expressly from vehicles undertaking the construction.</p> <p>1) Are the ExA to deduce from this that emissions from construction vehicles have not been incorporated into the carbon calculations?</p> <p>2) If that is correct, why is it appropriate to discount this from the overall total of emissions likely to be generated by the Proposed Development?</p> <p>3) Can a figure be placed on these emissions so that the contribution is transparent?</p> <p>4) With construction vehicles seemingly excluded, are the emissions of travelling to and from construction compounds accounted for with the 'Transport of Materials' category [APP-057, Tables 15-17 and 15-18]?</p> <p>5) What does construction worker commuting [APP-057, Tables 15-17 and 15-18] comprise and does this assume all workers go straight to site, or that workers would travel back and forth between the relevant construction compounds?</p>	<p>With respect to the calculation of GHG emissions in ES Chapter 15: Climate Change <b>[APP-057]</b>:</p> <p>1) As stated in paragraph 15.3.6 emissions resulting from plant activity during construction were only partly quantified. Plant construction vehicles are accounted for in Table 15-6, relating to trench excavation and backfilling (referred to as enabling works). The emissions from vehicles transporting materials and workers to the site are included and are presented in Table 15-16. Plant emissions relating to the construction of other aspects of the pipeline and Above Ground Installations (AGI) will be submitted at Deadline 2.</p> <p>2&amp;3) The Applicant intends to add the construction elements in an updated version of the chapter to be submitted at Deadline 2.</p> <p>4) Yes, emissions resulting from transport to and from construction compounds are covered within 'Construction Worker Commuting' in Tables 15-17 and 15-18 of ES Chapter 15: Climate Change <b>[APP-057]</b>.</p> <p>5) Assumptions on construction worker transport are presented in paragraph 15.4.25. Namely that workers travel 25km one-way (50km total journey) in an LGV.</p>
1.4.2	Applicant	<p><b>Calculations in respect of pipeline corridor</b></p> <p>The ES [APP-057, Table 15-17] makes no differentiation between the southwest or southeast exit routes from the Immingham compound. The Applicant is requested to provide clarity on the calculations used and provide a consistent approach to the assessment of the different options and, notwithstanding the contents of the Applicant's change request [AS-038 to AS-053], which route represents the worst-case scenario for emissions?</p>	<p>Table 15-17 in ES Chapter 15: Climate Change <b>[APP-057]</b> considers the construction stage carbon associated with the Immingham Facility and not the pipeline. Emissions associated with the pipeline exit routes are presented in Table 15-19. The embodied carbon emissions associated with the pipeline are calculated based on the option 1 pipeline route that exits the IAGI to the south-east. This pipeline route is approximately 200m longer than option 2 routed through the Phillips 66 facility and is therefore the worst-case scenario. As outlined in the Applicant's change request and associated documents <b>[AS-038 to AS-053]</b>, the southeast exit route is the selected exit route from the Immingham Facility, as option 2 (through Phillips 66) has been removed.</p>
1.4.3	Applicant	<p><b>Calculations in respect of Theddlethorpe</b></p> <p>The ES [APP-057, Paragraph 15.7.7] states emissions have been calculated only for Theddlethorpe Option 1, but then concludes the emissions for Theddlethorpe Option 2 would be similar with no significant difference. Bearing in mind Option 1 is redevelopment of previously developed land and Option 2 represents development of a greenfield site, explain how the conclusions regarding no material difference have been reached.</p>	<p>The facilities to be constructed at option 1 or 2 would be the same. Therefore, the only difference would be the land use change.</p> <p>The overall carbon footprint of Theddlethorpe Option 1 is 215 tCO<sub>2</sub>e, as presented in Table 15-18 of ES Chapter 15: Climate Change <b>[APP-057]</b>. This excludes land use change. Based on conservative worst-case assumptions for both options there is only a difference of 10tCO<sub>2</sub>e overall due to land use change.</p>

ExA-Q.1.4	Question to	Question	Applicant response
		The Applicant is requested to provide clarity on the calculations used and provide a consistent approach to the assessment of the different options.	
1.4.4	Applicant	<p><b>Missing assessment</b></p> <p>The works to the Dune Valve Station do not seem to be included within the assessment of construction emissions [APP-057]. Is this correct and, if so, is there a reason for this?</p>	The embodied carbon of the block valve stations is 38-39tCO <sub>2</sub> e (Table 15-25 to 15-27 of ES Volume II Chapter 15: Climate Change [APP-057]). It is likely that as the embodied carbon in the Dune Isolation Valve materials will have a similar, but most likely smaller, carbon footprint (Figure 3-14 and 3-26 of ES Chapter 3: Description of the Proposed Development [APP-045]). Their addition will likely be immaterial to the overall assessment. As stated in the Applicant's responses to WQ1.4.1 the Applicant intends to provide an update to the emission associated with all aspects of construction. This will include the construction of the Dune Isolation Valve. This update to the ES chapter (Revision A) will be provided at Deadline 2.
1.4.5	Applicant	<p><b>Missing assessment</b></p> <p>The ES [APP-057] makes no allowances or contingencies for venting emissions, either at the block valve stations or at the IAGI and TAGI. Provide details of the emissions likely over the operational lifetime of the development for:</p> <p>a) regular maintenance and routine venting on a 25m stack; and</p> <p>b) safety venting with a 50m stack.</p>	Venting of small quantities of CO <sub>2</sub> is considered to be a lost opportunity to store that CO <sub>2</sub> , rather than a primary GHG emission from the Proposed Development. The quantities also need to be considered in the context of the amount of CO <sub>2</sub> that will be transported through the Proposed Development, which aims to transport and store up to 10 million tonnes annually by 2030, rising to 15 million tonnes by 2035 (paragraph 3.1.9 of ES Chapter 3: Description of the Proposed Development [APP-045]). Any venting would cause a small reduction in the benefit of carbon storage that the Proposed Development enables by facilitating carbon storage.
1.4.6	Applicant	<p><b>Emissions from Operation</b></p> <p>ES Chapter 15 [APP-057, paragraph 15.7.19] states that all operational omissions of the Proposed Development are attributed to electricity usage. It is not stated why the operational assessment excludes the venting of CO<sub>2</sub> during maintenance or emergency scenarios, or the potential for fugitive emissions [APP-057]. The Applicant is requested to provide clarity on this matter and additional justification and any supporting evidence as to the criteria used to be able to scope this matter out. Why has a contingency figure not been applied for venting and venting emissions and what would the worst-case tonnes of carbon dioxide equivalent be from the Proposed Development with that contingency added?</p>	Based on the response to WQ1.4.5 the Applicant would not propose to add any contingency to the operational GHG emissions; rather, it is suggested that this would be a very small/ insignificant reduction in the CO <sub>2</sub> to be transported, of up to 10 million tonnes annual by 2030, rising to 15 million tonnes by 2035 (paragraph 3.1.9 of ES Chapter 3: Description of the Proposed Development [APP-045]).
1.4.7	Applicant	<p><b>Emissions during construction</b></p> <p>With reference to Table 15-6 [APP-057], paragraph 15.3.6 states that the following are omitted from the construction assessment;</p> <ul style="list-style-type: none"> <li>land-use change; removal of hawthorn plants, soil preparation, tree planting, and wild seeding as well as other landscaping activity;</li> <li>water-use in construction processes have been considered insignificant and have been excluded from the GHG calculation; and</li> </ul>	<p>With respect to Paragraph 15.3.6 in ES Volume II Chapter 15: Climate Change [APP-057]:</p> <p><b>Land-use change:</b> The majority of GHG emissions from land-use change are expected to come from pipeline construction. The excavation and backfilling from construction will have a minimal carbon impact as any excavated soil will be put back in place and vegetation re-established. Land-use change as a result of construction at the Immingham Facility and Theddlethorpe Facility (Option 1) will also have a zero or minimal carbon impact because construction will be on brownfield sites. With most of the land-use change emission sources identified as having zero or minimal impact, the overall GHG impact of land-use change on the Proposed Development at the constructions stage is anticipated to not be significant.</p>



ExA-Q.1.4	Question to	Question	Applicant response
		<ul style="list-style-type: none"> <li>• electricity and fuel use in construction processes.</li> </ul> <p>No evidence or detailed justification for excluding these matters from the GHG calculations has been given other than to say, <i>“these emissions sources are not anticipated to be material to the overall emissions impact”</i>. The Applicant is requested, with reference to the relevant guidance, to provide clarity on this matter and additional justification as to the criteria used to be able to scope these sources out. Why have these been omitted and what will the operational assessment change to if they are included?</p>	<p><b>Water-use:</b> The majority of GHG emissions from water-use for construction are expected to come from in-situ concrete. In-situ concrete emission factors used in the Applicant's assessment from the ICE database already account for water usage. Therefore, as in-situ concrete used at the AGIs make up for less than 0.21% (161 tCO<sub>2</sub>e) of total product stage emissions (77,187 tCO<sub>2</sub>e), the carbon impact of other water-use for construction is expected to be minimal and has been omitted on this basis.</p> <p><b>Electricity and fuel use in construction process:</b> As confirmed in response to Q1.4.1, electricity and fuel use in construction will be included in the revised assessment submitted at Deadline 2.</p>
1.4.8	Applicant	<p><b>Emissions during construction</b></p> <p>In order to understand the total GHG emissions during construction in relation to the individual sections listed [APP-057, Tables 15-16 to 15-27], it may be beneficial to additionally provide as a single table (e.g. each section as its own column with the total at the end), as at present the numbers do not appear to fully add up, and it is not clear how the pipeline options (Tables 15-22 and 15-23) have been considered in the total. The Applicant is requested to provide clarity on the calculations used.</p>	<p>Table 15-16 in ES Chapter 15: Climate Change [APP-057] provides the sum total of GHG emissions of the project during the construction period. Paragraph 15.7.5 describes how construction emissions are apportioned, this broadly aligns with the structure of ES - Volume IV - Appendix 3-4: Bill of Quantities [APP-071] and the Key Components of the Proposed Development as described in section 3.4 of ES Chapter 3: Description of the Proposed Development [APP-045]. In terms of the tables presented, Table 15-24 provides a carbon footprint for a second option of the pipeline which is not selected. Option 2 is not quantified as discussed in paragraph 15.7.7. When excluding this, the totals presented through Tables 15-17 to 15-27 add up to match the total in 15-16. A table presenting all the emissions information is provided in Appendix F of this document. An update of this table will also be included in the updated ES Chapter submitted at Deadline 2.</p>
1.4.9	Applicant	<p><b>Emissions from operation</b></p> <p>Maintenance of the Proposed Development is not included within the assessment, as paragraph 15.3.7 [APP-057] states that <i>“Only limited maintenance activities are required to be undertaken during the operational lifespan of the Proposed Development, as outlined in section 3.14”</i>.</p> <p>No evidence or detailed justification for excluding these matters from the GHG calculations has been given. They are initially listed in table 15-6 [APP-057]. The Applicant is requested to provide clarity on this matter and additional justification and any supporting evidence as to the criteria used to be able to scope this matter out.</p>	<p>Table 3-9 in ES Chapter 3: Description of the Proposed Development [APP-045] provides a summary of the required maintenance activities for the Proposed Development. Paragraphs 3.14.22 to 3.14.26 describe these activities in detail.</p> <p>The majority of emissions from maintenance visits, which range from weekly to every 5 years, will relate to fuel use by vehicles driven by the maintenance personnel. It is likely, as these visits will take place over a 25+ year period, that these vehicles will eventually be electric, or hydrogen powered. This, combined with the small amounts/infrequent of travel envisaged, is considered to justify not including this element in the emission calculations. Updated RICS guidance<sup>1</sup> suggests that maintenance and repair emissions would amount to 1.25% of the embodied carbon of a project or 1,053tCO<sub>2</sub>e. Additionally, the main maintenance emissions associated with the project will significantly decarbonise over time. RICS guidance suggests that any maintenance activities should be modelled as decarbonising by 50%, which would reduce the total to 527tCO<sub>2</sub>e. Based on this it is considered realistic to assume that maintenance activities are minimal, particularly when compared against the overall benefits the project enables through providing a pipeline for CO<sub>2</sub> storage.</p> <p><sup>1</sup> Whole life carbon assessment for the built environment, Royal Institution of Chartered Surveyors (RICS), Version 2, Issued November 2023.</p>
1.4.10	Applicant	<p><b>Emissions from operation</b></p> <p>Table 15-28 [APP-057] only appears to assess operational energy use, however table 15-6 lists 4 aspects as required to be scoped in:</p>	<p>Whilst there are potential gains in sequestration from planting and habitat creation, IEMA guidance on GHG emissions<sup>1</sup> sets out that a worst-case scenario approach which should be adopted. For this reason, it is considered reasonable to exclude/not calculate the benefits from sequestration.</p> <p><sup>1</sup> Assessing Greenhouse Gas Emissions and Evaluating their Significance, Institute of Environmental Management and Assessment (IEMA), Second Edition, February 2022.</p>

ExA-Q.1.4	Question to	Question	Applicant response
		<ul style="list-style-type: none"> <li>• Emissions arising from fuel consumed by maintenance vehicles and plant;</li> <li>• Embodied GHG emissions within the materials used for maintenance;</li> <li>• Grid electricity use during operation of the development; and</li> <li>• Gains in sequestration value due to new planting and habitat creation.</li> </ul> <p>Whilst some of the ExQ1 above addresses the omissions of points 1 and 2, and point 3 is assessed, it is not clear why point 4 has been omitted, as it is not referred to anymore in the ES, including within paragraph 15.3.7 which lists exclusions from the calculations. The Applicant is requested to provide clarity on this matter and additional justification and any supporting evidence as to the criteria used to be able to scope this source out.</p>	
1.4.11	Applicant	<p><b>Emissions from operation</b></p> <p>The operational assessment provided in ES [APP-057] also does not appear to quantify the avoided emissions as a result of the operation of the Proposed Development. As the estimated throughput of the Proposed Development is known, it is considered that this can be calculated. The Applicant is requested to provide clarity on the calculations used.</p>	<p>The Proposed Development aims to transport and store up to 10 million tonnes annually by 2030, rising to 15 million tonnes by 2035 (paragraph 3.1.9 of ES Chapter 3: Description of the Proposed Development [APP-045]). The initial storage area has a verified storage capacity of 300 million tonnes (paragraph 3.1.12 of Chapter 3 [APP-045]). This will be included in the updated assessment in Chapter 15 submitted at Deadline 2.</p>
1.4.12	Applicant	<p><b>Emissions during decommissioning</b></p> <p>On-site decommissioning activity is not included as paragraph 15.3.8 [APP-057] states that <i>"is not currently feasible to assess emissions for construction activities during decommissioning. Due to uncertainty surrounding future construction techniques and technology these emissions should be assessed closer to the decommissioning date"</i>.</p> <p>No evidence or detailed justification for excluding these matters from the GHG calculations has been given, as it could be considered that these are broadly similar to construction related works. They are also initially listed in table 15-6 [APP-057], and an assessment of decommissioning was required to be scoped in as per the Scoping Report. The Applicant is requested to provide clarity on this matter and additional justification as to the criteria used to be able to scope this matter out.</p>	<p>Only plant fuel consumption associated with decommissioning is not quantitatively assessed, as stated in paragraph 15.3.8 of ES Chapter 15: Climate Change [APP-057]. The UK government is legally committed to achieving net zero by 2050, which will require decarbonising waste, fuel consumption, and energy-use in the UK. The Proposed Development is expected to have an operational lifespan of a minimum of 25 years. It is anticipated that by the time of decommissioning the identified sources of emissions i.e., energy consumption, fossil fuel consumption, and waste disposal, will be minimal if not zero emission technology. In addition, decommissioning work will not be similar to construction other than in relation to the construction of AGIs, because the pipeline itself will be left in the ground. Given current national net zero targets for 2050, and the reduction in GHG emissions sources from decommissioning the Proposed Development, it was qualitatively assessed as being minimal. There is allowance in IEMA guidance on GHG emission calculation to qualitatively assess the impact of sources, particularly when data is unavailable (section 5.4 of IEMA guidance<sup>1</sup>). Based on this guidance and the likelihood that the pipework will not require decommissioning and removal, the impact of decommissioning plant activity was not quantified and assumed to be minimal.</p> <p>Paragraph 7.1.8 of the Draft Construction Environmental Management Plan [APP-068] states that a Decommissioning Environmental Management Plan will be produced prior to decommissioning to mitigate any potentially significant environmental impacts, however GHG emissions would be unlikely to be significant.</p> <p><sup>1</sup> Assessing Greenhouse Gas Emissions and Evaluating their Significance, Institute of Environmental Management and Assessment (IEMA), Second Edition, February 2022.</p>

ExA-Q.1.4	Question to	Question	Applicant response												
<b>Impacts of Climate Change</b>															
1.4.13	Applicant	<p><b>Sea Level Rises</b></p> <p>The ExA has noted, as has the Environment Agency (EA) [RR-034], that the forecast of sea level rise impacts is only considered in relation to the TAGI [APP-057]. However, the IAGI would also be susceptible to sea level rise impacts. Explain why no assessment has been provided or, preferably, provide such an assessment.</p>	<p>As stated in paragraph 15.5.3 of ES Chapter 15: Climate Change [APP-057], the study area for the climate change risk assessment considers the whole DCO site boundary, so considers sea level rise risks on all infrastructure.</p> <p>Table 15-15 [APP-057] presents the climate data used for the assessment (except sea level), using the nearest weather station (Cleethorpes). The nearest station is the same for all areas of the Proposed Development.</p> <p>Table 15-15 accounts for sea-level rise for the Immingham Facility. The extracted climate data is from the closest meteorological station to both sites, as stated in paragraph 15.5.8. Table 15-15 accounts for sea-level rise for the Theddlethorpe Facility. This was used to assess sea level rise for the Proposed Development.</p> <p>The data extracted to measure sea-level rise analyses a 25km square grid of the sea closest to both sites. As shown in the table below the data for both sites are the same, within two decimal points, for sea-level anomalies between 2010 and 2039. Considering the uncertainty boundaries of each projection, they are broadly considered to be similar projections of sea level rise. Therefore, the data used for the Climate Change Risk Assessment is considered sufficient. The Immingham Facility is not listed in Table 15-31 but would be subject to the same level of risk and significance i.e. Minor Adverse.</p> <table border="1"> <thead> <tr> <th>Time-mean sea level anomaly location</th> <th>RCP 8.5 (2010-2039)</th> <th>RCP 8.5 (2040-2069)</th> <th>RCP 8.5 (2070-2099)</th> </tr> </thead> <tbody> <tr> <td>Immingham</td> <td>0.13 (0.10 to 0.16)</td> <td>0.33 (0.25 to 0.42)</td> <td>0.60 (0.45 to 0.79)</td> </tr> <tr> <td>Theddlethorpe</td> <td>0.13 (0.10 to 0.16)</td> <td>0.34 (0.26 to 0.43)</td> <td>0.62 (0.46 to 0.81)</td> </tr> </tbody> </table> <p>All sites susceptible to Flood risk have also been identified and assessed in ES - Volume IV - Appendix 11-5: Flood Risk Assessment [APP-101], with a conclusion that it will be possible to manage flood risks to and from the Proposed Development in paragraph 7.1.31. Therefore, there is no need to update the climate change risk assessment as there is no significant effect to the Proposed Development.</p>	Time-mean sea level anomaly location	RCP 8.5 (2010-2039)	RCP 8.5 (2040-2069)	RCP 8.5 (2070-2099)	Immingham	0.13 (0.10 to 0.16)	0.33 (0.25 to 0.42)	0.60 (0.45 to 0.79)	Theddlethorpe	0.13 (0.10 to 0.16)	0.34 (0.26 to 0.43)	0.62 (0.46 to 0.81)
Time-mean sea level anomaly location	RCP 8.5 (2010-2039)	RCP 8.5 (2040-2069)	RCP 8.5 (2070-2099)												
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Theddlethorpe	0.13 (0.10 to 0.16)	0.34 (0.26 to 0.43)	0.62 (0.46 to 0.81)												
1.4.14	Applicant	<p><b>Venting conditions</b></p> <p>Neither the ES [APP-057] nor the Habitats Regulations Assessment (HRA) [AS-026] tackle the issue of venting and the climatic conditions in which this could take place. Whilst common sense that venting in a strong wind would result in gas emissions being diluted and transported rapidly from source, venting in still or foggy conditions may result in less of a dispersal with potential for air to sink. Can the Applicant set out their thoughts on this and whether general venting (as opposed to emergency venting) should only be undertaken in certain climatic conditions?</p>	<p>Please see the Applicant's response to WQ1.2.10. Venting restrictions in climatic conditions would have no impact on the climate assessment as presented within ES Chapter 15: Climate Change [APP-057] as the receptor is the global environment.</p>												





**Table 5: Q.1.5 Compulsory Acquisition**

ExA-Q.1.5	Question to	Question	Applicant response
<b>Overarching Case</b>			
1.5.1	Applicant	<p><b>Compulsory Acquisition (CA) Schedule</b></p> <p>Please provide updates of the CA Schedule concerning the position of ongoing negotiations for acquisition by agreement and include the total number of plots for which agreement has been reached. The Applicant is requested to provide regular updates throughout the Examination. Please ensure that the number of outstanding objections at the date of the updated CA schedule is correctly reflected.</p>	<p>An update to the Compulsory Acquisition Schedule has been provided as requested as Revision 2.0 <b>[AS-030]</b>.</p> <p>The Applicant intends to provide an update to the document at each of the deadlines throughout the examination.</p>
1.5.2	Applicant	<p><b>Funding Statement</b></p> <p>Paragraph 12.1.1 of the Funding Statement [AS-011] states that <i>“the Applicant has sufficient funding to compensate those with an interest in the Order Land.”</i> However, the guidance from the former Department for Communities and Local Government published in September 2013 states at paragraph 17 that Applicants should provide as much information as possible <i>“about the resource implications of both acquiring the land and implementing the project.”</i> Please explain that the costs are available both for acquisition and implementation.</p>	<p>The Applicant is Chrysaor Production (U.K.) Limited, a Harbour Energy company. Harbour Energy is the UK's largest oil and gas producer and is listed on the London Stock Exchange. In 2023 Harbour delivered c.15 per cent of UK oil and gas production. Harbour Energy ensures that all entities within its corporate structure are adequately capitalised in order to undertake their activities, and as such benefit from the full financial strength of the group.</p> <p>The Viking CCS Project will be jointly funded by Harbour Energy 60% and BP Exploration Operating Company Limited 40%.</p> <p>The Applicant confirms that sufficient funding is available to compensate those with an interest in the Order Land and will be available to finance the project.</p> <p>Please also refer to paragraph 1.6.1 of Revision A of the Funding Statement <b>[AS-011]</b>.</p>
1.5.3	Applicant	<p><b>Unknown Interests</b></p> <p>There are a number of interests identified as “unknown” in the Book of Reference (BoR).</p> <p>What further steps during the Examination will be taken to identify any persons having an interest in land?</p>	<p>Land agents for the Applicant have conducted multiple rounds of diligent inquiry including desktop land referencing research, contacting landowners, site inspections, the erection of site notices to identify unknown land interests, and the erection of site notices for pre-application statutory consultation. These actions were undertaken to establish ownership and fulfil the Applicant's statutory obligations.</p> <p>Further site notices were erected at the section 56 stage to notify unknown interests of the acceptance of the application in accordance with section 230 of the Planning Act 2008.</p> <p>Further communications with landowners or potentially interested parties have taken place; and the Land Registry has been checked regularly for any updates to land registration.</p> <p>In a continued effort to identify unknown ownerships, diligent inquiry will be continued using the following methods: Land Registry refresh, communication with stakeholders, and site visits.</p>
1.5.4	Applicant	<p><b>Alternatives to Acquisition</b></p> <p>The section on “Consideration of Alternatives” in the SoR [AS-013] is very brief. The Applicant refers to the Consultation Report and details of certain changes are set out at paragraph 5.3.2 of the SoR. Please set out in summary form, with document references where appropriate, if any further assessments of alternatives have been made to the proposed acquisition of land or interests.</p>	<p>The consideration of alternatives undertaken by the Applicant can be divided into two broad categories: (i) alternative practical solutions and (ii) alternative legal mechanisms to secure the powers required.</p> <p><b>(i) Practical solutions</b></p> <p>As set out in section 2.4 of the ES Chapter 2: Design Evolution and Alternatives <b>[AS-021]</b> the routing of the Proposed Development is determined by the underpinning objective of creating a linkage between the carbon emitters in the Humber industrial area to the existing LOGGS pipeline at Theddlethorpe. Given the distances involved, it is inevitable that the Applicant would require access to third party land to enable the project to achieve its objectives. The Applicant has consulted with landowners on the proposed route options and has worked with landowners to minimise impacts on them. This is illustrated by the information in ES Chapter 2 <b>[AS-021]</b>, which includes in paragraph 2.11.3 a range of design revisions that were made by the Applicant</p>

ExA-Q.1.5	Question to	Question	Applicant response
			<p>following consultation. This includes, for example, relocating the Washingdales Lane Block Valve Station at the landowner's request.</p> <p><b>(ii) Alternative legal mechanisms</b></p> <p>As set out in the Statement of Reasons [AS-043], the main alternative that the Applicant has considered to the use of compulsory powers is to acquire the land and rights on a voluntary basis. That remains the Applicant's preference and the Applicant is engaging with landowners to achieve that.</p> <p>The Applicant also considered alternative legal mechanisms to secure the rights, namely whether the rights necessary to construct the pipeline should be secured via a lease or via easement.</p> <p>A number of legal risks exist with an easement structure for a pipeline development such as the Viking CCS Pipeline. In headline terms, these relate to the need to identify a 'dominant tenement' for an easement to be taken. It is a well-established principle (see the case of <i>Re Ellenborough Park</i> [1955] EWCA Civ 4) that in order to create a legal easement (rather than a personal agreement between the parties which does not bind successors in title):</p> <p>(a) the extent of the land with the benefit of such an easement (the dominant tenement) must clearly be identified; and</p> <p>(b) the extent of the land over which such rights may be exercised (the servient or burdened land) must also clearly be identified.</p> <p>The requirement for the extent of the land with the benefit of an easement to be clearly identified differs where the beneficiary of the right is a statutory undertaker. The High Court decision in <i>Bate v Affinity Water</i> [2019] EWHC 3425 reaffirmed the long-standing position set out in the judgement of <i>Re Salvin's Indenture</i> [1938] All ER 498 that statutory undertaking easements are in effect a special case. These cases confirm that the undertaking of a statutory undertaker can itself constitute a dominant tenement in relation to an easement over land.</p> <p>Firstly, the Applicant, as the undertaker in the DCO, is not a statutory undertaker. This means that it cannot take the approach established in case law (<i>Re Salvin's Indenture</i> [1938] All ER 498 and confirmed in <i>Bate v Affinity Water Ltd</i> [2019] EWHC 3425) that the undertaking of a statutory undertaker is the dominant tenement. This differs from other DCOs and CPOs promoted by gas or electricity undertakers for pipelines or cables.</p> <p>Secondly, the need to identify a dominant tenement is considered potentially problematic for the Viking CCS Pipeline. Amongst other things, this is due to (a) the length of the pipeline and distance from the location of potential areas of dominant land, (b) the requirement for surface sites along the route of the pipeline (and the need for potential freehold ownership of such assets), (c) the existing LOGGS pipeline at the Theddlethorpe end of the route being held under lease and (d) the potential for future extensions/spurs, constructed after the initial construction of the Viking CCS Pipeline (to connect other emitters to the pipeline). Again, this is different to other linear cable projects.</p> <p>This uncertainty on an easement structure is considered an unacceptable risk, which leads to the lease approach being adopted. This in turn has informed the approach to compulsory acquisition. In practical terms this lease structure does not materially differ from an easement. The infrastructure and use of land as well as the ongoing restrictive covenants are materially the same. Moreover, key commercial points such as remuneration, indemnification, and conditionality relating to the use of the land would be in the same terms. The substance of each document is therefore the same.</p>
1.5.5	All Local Authorities	<b>Alternatives to Acquisition</b>	

ExA-Q.1.5	Question to	Question	Applicant response
		<p>In their roles as both Planning Authority and Highways Authority, are the Local Authorities aware of any reasonable alternatives to the CA or Temporary Possession (TP) sought by the Applicant or of any areas of land or rights that the Applicant is seeking the powers to acquire that they consider would not be needed?</p>	
1.5.6	Applicant	<p><b>Consultation</b></p> <p>The ExA had concerns regarding the content of the Schedule of Negotiations [APP-012] as clearly there had been very little contact as evidenced by the many representations received from Affected Persons (APs).</p> <p>The position has progressed with the submission of the CA Tracker [AS-030] in January 2024 which lists 183 Freeholders but with no objections. This is not correct since at that time there were four representations which were clearly objections and another two which mentioned the possibility of statutory blight having arisen. The ExA require evidence of meaningful engagement to be submitted to the Examination with explanations where such cannot be provided.</p>	<p>An update to the Compulsory Acquisition Schedule and Schedule of Negotiations has been provided as requested. See Revision 2.0 of the Compulsory Acquisition Tracker (<b>document reference 3.5</b>) and Revision 2.0 of the Schedule of Negotiations and Powers Sought (<b>document reference 3.4</b>).</p>
1.5.7	Applicant	<p><b>CA in proximity to the IAGI</b></p> <p>Paragraph 3.1.11 of the Description of the Proposed Development [APP-045] states that <i>“The CO<sub>2</sub> to be transported in the Viking CCS Pipeline will be captured, conditioned and compressed by emitters, including Phillips 66 and VPI Immingham”</i>. In such circumstances, it is difficult to understand why CA is sought over land owned by Phillips 66 Limited and Immingham VPI LLP when it is clear that a commercial negotiation will need to be concluded with these APs and without such contracts in place, the flow of CO<sub>2</sub> will be significantly reduced. Please explain.</p>	<p>The agreement between the Applicant and emitters in relation to the transport of CO<sub>2</sub> through the Viking CCS Pipeline is subject to a separate contract and legal process than the acquisition of land necessary for the construction and operation of the Proposed Development. The sequencing of emitters to the Viking CCS Project will be subject to the UK Government Track-2 process.</p> <p>Within the DCO application, the Applicant is seeking all land and rights necessary to construct and operate the Proposed Development. The Applicant considers that this is necessary to ensure its delivery. The Applicant is continuing to engage with Phillips 66 Limited and VPI Immingham LLP with a view to reaching voluntary agreements to acquire the land and rights necessary, with negotiations at an advanced stage.</p>
1.5.8	Phillips 66 VPI Immingham	<p><b>Proposed Change Request and the IAGI</b></p> <p>The Applicant has just submitted a Change Request which relates to:</p> <ul style="list-style-type: none"> <li>a) the reduction of the Order Limits for works related to the IAGI and associated accesses; and</li> <li>b) the removal of Option 2 for the pipeline route in the vicinity of the IAGI.</li> </ul> <p>Phillips 66 Limited [RR-084] and Immingham VPI LLP [RR-115] both made objections to the Application. The concerns related not just to the proposed Option 2 but also such issues as the amount of the permanent and temporary land take and also the safeguarding through the Protective Provisions. Do these</p>	

ExA-Q.1.5	Question to	Question	Applicant response
		companies wish to maintain their objections to the application for a DCO and, if so, on what basis?	
1.5.9	Applicant	<p><b>Omitted Documents</b></p> <p>Paragraph 3.1.13 [APP-045] states that “currently, as of summer 2023, a Scoping Report has been prepared and baseline and assessment work are currently underway which will form part of the ES. Following acceptance of the ES, consent may be granted by the Secretary of State via the licencing authority. This lies outside the scope of this ES.”</p> <p>Please explain why these documents are not being produced to this Examination when the offshore elements seem fundamental to the workings of the pipeline? The fact that it is subject to a separate consent regime appears irrelevant.</p>	Please see the responses provided to WQ1.1.8 and 1.9.6.
1.5.10	Applicant	<p><b>Pipeline Depth</b></p> <p>Paragraph 3.7.10 [APP-045] states that “The pipeline is expected to have an external diameter of 24” (609 mm) and be buried to a minimum depth of 1.2 m to the top of the pipe. This will be greater at crossing points of railways, roads and watercourses.” Several Affected Persons (APs) raise concerns over the depth of the pipeline yet the dDCO [AS-008] allows the Applicant to reduce this depth. In what circumstances may this happen and has this possibility been made clear to concerned farmers and other APs.</p>	<p>The main constraints that could require a deviation from the intended depth of at least 1.2m are geological features and existing services. Until the Applicant has undertaken pre-commencement surveys, it cannot be certain of the depth of potential geological features that could prevent burial at this depth. Older services are often not mapped accurately meaning the Applicant cannot be certain of their location or depth at this time.</p> <p>The Applicant will endeavour to achieve the minimum depth in all agricultural locations in order that normal farming use can be resumed over the pipeline, however until the final pre-commencement surveys are complete, and the final alignment is known, the potential need for minor deviations from that cannot be ruled out. The Applicant has discussed this possibility with all landowners / occupiers along the route that it is currently engaging with. The potential for deviation is reflected in the commercial heads of terms that have been offered to those clients which include, amongst other things:</p> <ul style="list-style-type: none"> <li>• An obligation on the Applicant to engage with the landowner where the target depth cannot be achieved, with a view to reaching a mutually agreeable solution.</li> <li>• An obligation on the Applicant to pay additional compensation where previous agricultural activities cannot be resumed as a result of the Proposed Development.</li> </ul>
1.5.11	Applicant	<p><b>Corporate Structure</b></p> <p>Following from the previous question, it is noted from the company structure provided that the Applicant is some degree removed from the parent company, Harbour Energy PLC. There are four different Chrysaor companies between the parent company and the Applicant (figure 1 from [AS-011]) and one of these is based in the Cayman Islands. Please explain why the ExA and the SoS should be comfortable with such a degree of remoteness and provide, in effect, a corporate family tree to show both the chain of command and chain of funding.</p>	<p>Harbour Energy’s corporate structure was formed through three major acquisitions. The entities in the corporate structure reflect legacy entities of acquired companies and the structuring necessary to effect the acquisitions. Structuring with intermediate entities is typical of the organisation of oil and gas companies. Harbour Energy ensures that all entities within its corporate structure are adequately capitalised in order to undertake their activities, and as such benefit from the full financial strength of the group.</p> <p>Within the corporate structure (chain of command), the Viking CCS Director reports to the EVP Strategy, BD and Energy Transition, who in turn reports to the Harbour Energy CEO. The Annual Report and Accounts available at the point of submission are appended to the Funding Statement [AS-011].</p>
1.5.12	Applicant	<p><b>Project costs</b></p> <p>As to the costs of the project, is £240 million realistic bearing in mind the current economic uncertainty and high interest rates. Is there any update on this figure? Furthermore, please provide</p>	The current estimate for the overall project development cost is c.£1bn, of which the onshore pipeline element - as per this Development Consent Order application - is approximately 25%. This development cost estimate will be subject to further definition during the ongoing Front End



ExA-Q.1.5	Question to	Question	Applicant response
		<p>costings for the offshore element which is the subject of separate consents?</p>	<p>Engineering Design (FEED) and market engagement with the supply chain throughout 2024. This development cost estimate represents an end pre-FEED level of design maturity.</p> <p>Based on this classification and design maturity to date, the Applicant believes the costs to be sufficient for the current procurement market conditions. The next estimate update will take place in 2025 following the completion of the next phase of engineering and commercial engagement of the supply chain.</p>
1.5.13	Applicant	<p><b>Laydown Areas</b></p> <p>Chapter 3 of the ES [APP-045] refers to the requirements of both a 40 m x 40m temporary land take, and 20 m x 15 m laydown area for the construction of the facilities. It is not clear whether the laydown area forms part of the 40 m x 40m temporary land take, or whether this is a separate area. The Applicant is requested to provide information on this. If the laydown is separate, can the Applicant confirm how this is presented in the application documents, in particular the works plans, lands plans and DCO [AS-008], and confirm how the planned arrangements have been assessed within the ES.</p>	<p>The 40m x 40m temporary working area is different to the 20m x 15m laydown area. Both will have similar equipment located within them i.e. an office, welfare facilities and plant. However, the 20m x 15m would be expected to be used in a more transient manner, as a laydown for plant and equipment when it is first delivered to site and before it is moved to another area of the site for use through the construction period.</p> <p><b>Immingham Facility</b></p> <p>The working and laydown areas will be located within Works Nos. 01 and 01a on the Works Plans (Part 1 of 2) [APP-014]. The precise location will depend, in part, on the exact permanent location of the Immingham Facility and the optimal practical method to arrange the site for construction. The area of Work No.01a would only ever be used for these temporary activities and would not have the permanent facility situated within it.</p> <p>On the Land Plans [APP-016] the working and laydown areas would be within plots 1/32 and 1/57.</p> <p><b>Theddlethorpe Facility – Option 1</b></p> <p>The working and laydown areas would be located within Work No. 44 on the Works Plans (Part 2 of 2) [APP-015] and within plots 35/35 35/37 and 35/38 on the Land Plans [APP-016]. The precise location will depend, in part, on the exact permanent location of the Theddlethorpe Facility and the optimal practical method to arrange the site for construction.</p> <p><b>Theddlethorpe Facility – Option 2</b></p> <p>The working and laydown areas would be located within Work No. 42 on the Works Plans (Part 2 of 2) [APP-015] and within plot 35/14 on the Land Plans [APP-016]. The precise location will depend, in part, on the exact permanent location of the Theddlethorpe Facility and the optimal practical method to arrange the site for construction.</p> <p><b>ES assessment</b></p> <p>Each environmental topic assessment within the Environmental Statement was undertaken based on the description of the project provided in ES Chapter 3: Description of the Proposed Development [APP-045]. The assessments took account of the ‘worst case’ where there was optionality within the project description. The topic specific assessments had regard to the need for a temporary working area and laydown area as part of the assessment of construction activities for the Immingham Facility and Theddlethorpe Facility.</p>
<b>Statutory Undertakers</b>			
1.5.14	Applicant	<p><b>Book of Reference (BoR)</b></p> <p>The BoR [AS-015] includes reference to a number of Statutory Undertakers with interests in land. Please provide a progress report on negotiations with each of the Statutory Undertakers and</p>	<p>Discussions are progressing well with Statutory Undertakers to develop Statements of Common Ground and Protective Provisions (where required). The Applicant does not expect there to be any outstanding impediments at the end of the Examination period. The Applicant has submitted draft Statements of Common Ground at Deadline 1 and will continue to update these through the Examination.</p>



ExA-Q.1.5	Question to	Question	Applicant response
		indicate whether there are any likely impediments to the securing of agreements with such Statutory Undertakers before the end of the Examination.	
1.5.15	Applicant	<p><b>Exemptions</b></p> <p>At paragraph 6.1.5 of the SoR [AS-013], the Applicant states that the “width of the Order Limits is generally 100m.” A specific exception is mentioned concerning the Anglian Water facility, but the ExA wishes to be satisfied of any other exceptions so please be specific of any other sites where the 100m width will be exceeded.</p>	<p>As stated in paragraph 6.1.5 of the Statement of Reasons [AS-013] the Order Limits are generally 100m along the whole pipeline corridor.</p> <p>Along with the Anglian Water example the only other significant deviations from this are:</p> <ul style="list-style-type: none"> <li>• The area required for the Immingham Facilities</li> <li>• The Northern Construction Compound</li> <li>• The central Construction Compound</li> <li>• The entry to the Theddlethorpe facility (Option 1)</li> <li>• The Theddlethorpe facility (Option 1 and 2)</li> </ul>
1.5.16	Applicant Anglian Water	<p><b>Anglian Water</b></p> <p>The ExA spent some time during the Unaccompanied Site Inspection (USI) [EV1-001] viewing the location of the Anglian Water facility and the crossing of the Louth canal. Apparently Anglian Water may have plans to expand or alter their works. Please explain why such a wide width is required in this location when rather more certainty might be expected at this stage?</p>	<p>The width of the Order Limits adjacent to the Anglian Water facility is approximately 200m to allow a Horizontal Directional Drilling (HDD) crossing to be made at either the eastern or western extent of the land owned by Anglian Water; providing flexibility so as not to unduly restrict the future expansion of their facilities.</p> <p>Whilst progressing the Statement of Common Ground with Anglian Water it has become apparent that their preference is for an easterly crossing and the Applicant is currently working in conjunction with them to try and facilitate this request.</p>
1.5.17	Applicant National Gas Transmission PLC National Grid Electricity Transmission Mablethorpe Flexible Energy Generation	<p><b>Theddlethorpe</b></p> <p>It is stated at paragraph 10.4.8 of the SoR [AS-013] that the Theddlethorpe Gas Terminal (TGT) site does not meet the requirements set out in s127(1) PA2008 for Statutory Undertaker's Land. Please provide a justification for this assessment as the site was decommissioned as recently as 2021 and, as stated at paragraph 10.4.9, National Grid has been “exploring plans for future development”?</p>	<p>The Applicant has submitted a Position Statement regarding the former Theddlethorpe Gas Terminal (EN07008/EXAM/9.16) which addresses this question.</p>
1.5.18	Applicant National Gas Transmissions PLC	<p><b>Theddlethorpe</b></p> <p>In their representation [RR-070], National Gas Transmission Plc (NGT) say that their site “was acquired and is generally needed for NGT's own operational purposes.” They add that “negotiations ..... are at an advanced stage”. Is this still disputed by the Applicant and, if so, please can NGT and the Applicant provide details of the original acquisition and current proposals and activities with the site?</p>	<p>The Applicant has submitted a Position Statement regarding the former Theddlethorpe Gas Terminal (EN07008/EXAM/9.16) which addresses this question.</p>
1.5.19	Applicant National Gas Transmissions PLC	<p><b>Theddlethorpe</b></p> <p>If it is found that NGT are not a Statutory Undertaker (SU) within s127 PA2008, then it is still argued [RR-070] that the land take includes “an excessive amount of land within the Order Limits” which will sterilise the future proposals for clean energy use on the site. The land required is shown on sheet 35 of the Land Plans [AS-016]. Can the Applicant be more specific as to their</p>	<p>The Applicant has submitted a Position Statement regarding the former Theddlethorpe Gas Terminal (EN07008/EXAM/9.16) which addresses this question.</p>

ExA-Q.1.5	Question to	Question	Applicant response
1.5.20	Applicant National Gas Transmissions PLC Phillips 66 Ltd	<p>land requirements to minimise the effect on future alternative uses?</p> <p><b>Immingham and Theddlethorpe</b></p> <p>The terms of the restrictive covenants set out at page 35 of the SoR [AS-013] appear rather wide. Please clarify over which land these covenants are being sought as according to the BoR [AS-015] it would appear to be limited to the blue land at the proposed IAGI and TAGI? Do the Landowners have any further comments concerning the imposition of these covenants?</p>	<p>The restrictive covenants referred to at the end of page 34 and onto page 35 of the Statement of Reasons [AS-013] relate specifically to plots 36/12, 36/13, 36/14, 36/15 and 36/16. These are plots where the existing LOGGS pipeline is situated.</p> <p>Restrictive covenants are sought over other areas of land, as specified in Table 3: Permanent acquisition of land for pipeline and Table 4: Permanent acquisition of rights. The plots where rights and restrictions would be imposed are listed in the first column in each table, with the detail of the rights and restrictions set out in the final column.</p> <p>The restrictions that would be imposed are to provide sufficient protection to the pipeline once it is installed. They prevent activities that would have the potential to cause damage to the pipeline or hinder the ability for the undertaker to access and maintain it. A number of the restrictions have exceptions that allow the landowner to obtain the undertaker's consent to undertake certain activities. The Applicant considers that the power to impose such restrictions reduces the extent of land that would otherwise be subject to outright acquisition. Overall, it is therefore a lesser interference with the rights of landowners and is in the public interest.</p> <p>The Applicant considers that the nature of the restrictions sought are standard for a project of this nature and also comparable with those imposed by other linear developments, such as underground cables.</p>
1.5.21	Applicant	<p><b>LOGGS Pipeline</b></p> <p>Paragraph 2.1.2 of the Bridging document [APP-128] explains that the proposed development will “repurpose existing 118km 36” offshore LOGGS pipeline.” It is not clear who owns this pipeline, and it is likely to be an associated company of the Applicant. Please explain the background and what arrangements will be in place to obtain consent to the use of this existing pipeline?</p>	<p>One of the main benefits of the wider Viking CCS Project is that the LOGGS pipeline is wholly owned by the Viking CCS Project partners. Therefore, approval to use the pipeline is controlled by the project.</p> <p>The Applicant is the Operator of the LOGGS pipeline.</p>
1.5.22	Applicant Anglian Water [RR-009] Louth Navigation Trust [RR-053] Environment Agency [RR-034]	<p><b>Louth canal</b></p> <p>The ExA viewed this site of the crossing of the canal during the USI [EV1-001]. It is shown at page 36 of ES Chapter 1 [APP-045] and designated by the black dot. The proposed method of crossing is detailed in paragraphs 3.12.201 to 3.12.211 [APP-045]. How satisfied are the parties mentioned as to the practicality and safety of the construction method proposed?</p>	<p>HDD is an appropriate technique for long trenchless crossings and is a proven, safe, and environmentally friendly method, which will have no effect upon the Louth canal/river Ludd subject to suitable ground investigation and design configuration prior to execution of the works.</p> <p>The technique was first adopted in the late 1960s and has been subsequently refined, improved, and updated over the intervening years with multiple successful completions. The Applicant considers this to be an entirely safe and appropriate process at this or any other location where HDD has been selected as the crossing technique.</p>
<b>Individual Affected Persons</b>			
1.5.23	Affected Persons	<p><b>Factual data</b></p> <p>Are any APs or Interested Parties (IPs) aware of any inaccuracies in the BoR [AS-015] SoR [AS-013] or Land Plans [AS-016]? If so, please set out what these are and provide the correct details.</p>	

ExA-Q.1.5	Question to	Question	Applicant response
1.5.24	Applicant	<p><b>Blight</b></p> <p>Please provide an update of any Blight notices served.</p>	<p>The Applicant has not received any notices in respect of blight and further does not consider that there would be a situation where blight would arise as a result of the Proposed Development.</p> <p>There is a process for claiming compensation in accordance with the statutory Compensation Code if there are areas of the land adversely impacted by the development.</p>
1.5.25	Applicant	<p><b>Protected characteristics</b></p> <p>Have any APs been identified as having protected characteristics as defined by the Equality Act 2010 and, if so, what regard has been given to them?</p>	<p>At CAH1, the Applicant noted that it does not fall within the definition of “public authority” as set out in Schedule 19 of the Equality Act and therefore the provisions of the Equality Act 2010 do not impose any obligations on it directly in respect of compulsory acquisition.</p> <p>However, the Applicant has sought to conduct the application so as not to exclude any groups with protected characteristics from participating. For example, the Applicant has hosted virtual events and exhibitions for those that may not be able to get to events in person, offered to provide documents in different formats, and held events at accessible and convenient venues. During the pre-application stage and consultation on the Proposed Development, the Applicant sought to engage with harder to reach groups, which can often overlap with those who have protected characteristics. The Applicant recognised in the Statement of Community Consultation (SoCC) that those with protected characteristics are often under-represented in the planning process, this is set out at section 5.5 of the SoCC and with express reference to the Equality Act 2010. Section 5.5 of the SoCC also set out how the Applicant would work with local authorities to reach those groups and how engagement was undertaken through the pre-application stage. The SoCC is at Appendix B of the Consultation Report <b>[APP-036]</b>.</p>
1.5.26	Applicant Phillips 66 Ltd	<p><b>Routeing from the IAGI</b></p> <p>The position may have moved on with the submission of the Change Request but in the CA Tracker [AS-030] submitted in January, it is submitted that <i>“Phillips 66 intend to lease the land at Immingham to Chrysoar and the lease agreement is in the final stages of negotiation.”</i></p> <p>However, as at the date of their submission [RR-084] on 15 January 2024, Phillips 66 Limited state that <i>“no legal agreement has been entered into.”</i> It is noted that Phillips 66 Limited objected to the Application in their RR though the CA Tracker does not record any objections at all to the DCO. Please clarify?</p>	<p>The Compulsory Acquisition Tracker has been updated (Revision 2) by the Applicant and submitted at Deadline 1 (<b>document reference 3.5</b>).</p>
1.5.27	Applicant	<p><b>Theddlethorpe</b></p> <p>The alternative to using the former TIAG site involves a permanent roadway and installation which leaves the field very difficult to farm in the future. This is raised by the relevant APs [RR-103]. If this Option is progressed, what can be done to minimise the impact on the farming operations both during construction and for the future?</p>	<p>The Applicant is aware of the potential future impact on the farming operations and will seek to mitigate these as far as is possible through the detailed design process. The Applicant will continue to engage with the affected party and their appointed agent with regards to minimise the impact on the farming operations both during construction and for the future.</p> <p>There is a process for claiming compensation in accordance with the Statutory Compensation Code if there are areas of the land adversely impacted by the development.</p>
1.5.28	Applicant Air Products (BR)	<p><b>Other Pipelines</b></p> <p>Air Products (BR) Limited raised an objection [RR-003] to the CA over land over which it has an interest. They have both oxygen and nitrogen pipelines within the land owned by Phillips 66. Has there been progress in trying to resolve their concerns?</p>	<p>The Applicant is engaging with Air Products (BR) Limited and is proposing to include protective provisions for their benefit within the draft DCO. These are currently under negotiation between the parties.</p>

ExA-Q.1.5	Question to	Question	Applicant response
1.5.29	Applicant The Spilman Family Aylesby Manor Farms Limited	<b>Blight</b> There are a number of representations from these Affected Persons [RR-012], [RR-066], [RR-109], [RR-121], [AS-036] and in particular relating to the lack of consultation and the impact the proposed pipeline will have on their farming operations. There is also a reference that the proposal might have resulted in statutory blight to their interests. What is the latest position with these negotiations?	Please refer to the Schedule of Negotiations and Powers Sought (Revision 2.0 submitted at Deadline 1 ( <b>document reference 3.4</b> )) and Response to Relevant Representations [ <b>RR-012</b> ], [ <b>RR-066</b> ], [ <b>RR-109</b> ], [ <b>RR-121</b> ] and [ <b>AS-036</b> ] for an update on the latest position with the negotiations.  The Applicant has not received any notices in respect of blight and further does not consider that there would be a situation where blight would arise as a result of the Proposed Development.  There is a process for claiming compensation in accordance with the statutory Compensation Code if there are areas of the land adversely impacted by the development.
<b>Crown land and special category land</b>			
1.5.30	Applicant	<b>Crown Interests</b> In accordance with s135(2), PA2008 consent is required for any provision in the DCO which relates to Crown Land or rights benefiting the Crown. The experience of the ExA from other projects is that this process can take some considerable time. Please provide an update of negotiations and confirm whether agreement is likely to be reached before the end of the Examination?	The crown interests in respect of the project are owner by The Crown Estate and the DVSA.  The Crown Estate is the owner of plots 36/12, 36/14, 26/15 and 36/16. Discussions between the Applicant and the Crown Estate had been delayed in starting, as the Crown Estate were prioritising their dealings with Track 1 CCS Projects. The Crown Estate have now confirmed that they are able to move forward discussions with the Applicant. These plots relate to the existing LOGGs pipeline, and the rights sought by the Applicant are in substance similar to the rights already in place and which have been exercised over the pipeline since the 1980s. The Applicant therefore hopes to progress these negotiations expeditiously.  The Applicant considers that negotiations with the DVSA, which owns plots 1/50, 1/60, 1/67 and 1/71 are at an advanced stage. The Applicant considers that it is likely that agreement will be reached with them before the end of the Examination.
1.5.31	Applicant	<b>Crown Land offshore</b> Paragraph 3.1.2 of the SoR confirms that the offshore elements of the Project are “ <i>subject to a separate consenting process.</i> ” Details of some of the consents required are given in the Bridging Document [APP-128] and paragraph 2.3.1 explains that “ <i>the Crown Estate is responsible for granting leases for offshore pipeline transportation, seabed and subsurface rights to developers for CO<sub>2</sub> storage, with the regulation of projects being carried out by the licensing authority, the North Sea Transition Authority</i> ”.  What is the current position concerning the negotiation of the lease with the Crown Estate?	As set out in response to WQ1.5.30, the Applicant and the Crown Estate are now progressing lease discussions. These negotiations consider both the infrastructure within the Order Limits of the Proposed Development and the separate lease that will be entered into for the marine elements of the wider Viking CCS Project.
1.5.32	Applicant	<b>Common land</b> The SoR [AS-013] at section 10.3 sets out details of Special Category Land as referred to in sections 131 and 132 PA2008. At paragraph 10.3.10 of the SoR, it is stated that the total area acquired is less than 200m <sup>2</sup> thus bringing it within the exception contained in section 131(5) PA2008. What is the precise area of the common land subsurface for which CA powers are sought?	As set out in paragraph 8.2.7 of the Statement of Reasons [ <b>AS-013</b> ], the proposed width of subsurface acquisition is a maximum of 8m. A measurement of 8m width at the centre of the Order Limits would give the following areas subsurface acquisition for the common land plots: <ul style="list-style-type: none"><li>• 29/11 = 32.97sqm</li><li>• 29/13 = 16.68 sqm</li><li>• 30/20 = 98.10 sqm</li><li>• Total area = 147.74sqm</li></ul> Whilst this measurement has been taken at the centre line and there could be some variation depending on where the pipeline was installed within the order limits, due to the shape of the



ExA-Q.1.5	Question to	Question	Applicant response
			<p>common land plots, the Applicant does not consider there would be any material difference and that the total area would remain below 200m<sup>2</sup>.</p> <p>For completeness, as set out in paragraphs 10.3.8 and 10.3.10, the Applicant considers that common land registration relates to its surface use. Once the pipeline is installed there would be no long-term interference with the surface of the common land and the surface would not be acquired.</p>
<b>Offshore</b>			
1.5.33	Applicant	<p><b>Licences</b></p> <p>It is stated at paragraph 5.1.5 of the Bridging Document [APP-128] and also para 3.1.9 of ES Chapter 3 [APP-045] that the Applicant has been granted a licence for appraisal and storage purposes. This licence is classified as Carbon Storage (CS) 005. This Licence clearly extends simply to exploratory purposes and is, in any event, time limited to a period of six years from October 2021. What further discussions have taken place with the North Sea Transition Authority for a long-term arrangement which allows more than mere exploration?</p>	<p>Similar to petroleum extraction licences, carbon storage licences contain an initial appraisal term. The purpose of this term is to allow the company to undertake any field exploration or appraisal activity and to mature the project technically through a stage-gated process. Within the appraisal term there are several technical activities and studies that are timebound. In addition, there is a well-defined process created by the North Sea Transition Authority to provide companies guidance on the process and technical maturity required to apply for a Storage Permit. In the case of Viking CCS, offshore exploration activity is not envisaged since the Applicant's legacy company developed, operated and decommissioned the licence acreage. At the end of this appraisal term, the company must decide whether it will submit a Storage Permit application to the North Sea Transition Authority or revoke the licence. For Viking CCS, the Applicant is intending to submit the first draft of the Storage Permit application in Q1 2025. The Storage Permit Application Guidelines are publicly available through the North Sea Transition Authority's website (<a href="https://www.nstauthority.co.uk/Regulatory-Information/licensing-and-consents/carbon-storage/">https://www.nstauthority.co.uk/Regulatory-Information/licensing-and-consents/carbon-storage/</a>), along with the details and terms of all issued carbon storage licences and other guidelines relating to offshore carbon storage.</p>
1.5.34	Applicant	<p><b>Licences</b></p> <p>Following from the previous question, the current Licence emphasises that no activity can be carried out until a Crown Lease has been granted. Please outline what discussions have taken place to date in order to achieve the grant of such a lease which will no doubt be required as the purpose and use will be different from that granted in the existing lease?</p>	<p>The Applicant needs to secure Crown Lease(s) for offshore acreage covered by its Carbon Storage Licences and held interim discussions with the Crown Estate in November 2023, January and March 2024 in readiness for commencing lease negotiations once Track-1 discussions were concluded.</p> <p>The Crown Estate recently advised the Applicant that they are ready to engage and following execution of a confidentiality undertaking both parties will commence discussions in April 2024.</p>
1.5.35	Applicant	<p><b>dDCO</b></p> <p>As no offshore works can be undertaken until the Crown Lease is granted, is it appropriate for a similar restriction relating to onshore works to be contained in the dDCO? If this is not considered necessary, then please explain why not?</p>	<p>The Applicant has set out in detail in WQ1.1.8 why it does not consider such a requirement to be necessary.</p>
1.5.36	Applicant	<p><b>National Policy Statements</b></p> <p>It was acknowledged at the CAH1 that the SoR [AS-013] should have referred to the final version of EN-1 which came into force on 17 January 2024. Paragraph 4.5.11 requires the Secretary of State to assess how the high-level marine objectives, plan vision, and all relevant policies; paragraph 4.9.10 refers to some of the consents that will be required; and paragraph 4.9.19 states that details should be provided as to how cumulative impacts will be assessed and whether any consents and licences have been</p>	<p><b>Paragraph 4.5.11</b></p> <p>Section 5 of EN-1 (2023) provides guidance on the policy context, content of applications and considerations for the Secretary of State when considering development consent order applications affecting the marine environment. The Proposed Development does not seek consent to undertake any works in the marine environment. As such, the Applicant does not consider that the provisions of paragraph 4.5.11 are relevant.</p> <p><b>Paragraph 4.9.10 and 4.9.19</b></p>



ExA-Q.1.5	Question to	Question	Applicant response
		<p>obtained. Does the Applicant consider that these provisions apply to this application and, if not, then please justify their position?</p>	<p>The guidance in section 4.9 of EN-1 (2023) focusses on applications for development consent for power stations with associated carbon capture technology. Most of that section is therefore not directly applicable to the Proposed Development.</p> <p>However, the Applicant considers that to the extent that it is relevant, the Application documents set out the information required. Paragraph 4.9.10 notes that Offshore CO<sub>2</sub> transport and storage infrastructure is subject to a separate permitting a licensing regime. The Applicant has provided an overview of that process in the Bridging Document <b>[APP-128]</b> and in the updated (Revision A) Consents and Agreements Position Statement (<b>document reference 7.2</b>).</p> <p>Paragraph 4.9.19 notes that Applicants should provide information on how captured CO<sub>2</sub> from a power CCS project is intended to be transported and stored, how cumulative impacts will be assessed and whether any necessary consents, permits and licences have been obtained. The Applicant has set out within the Bridging Document <b>[APP-128]</b> and in the updated (Revision A) Consents and Agreements Position Statement (<b>document reference 7.2</b>) an outline of the infrastructure that will be built offshore to complete the transport and storage. The Bridging Document explains that there is no potential pathway for inter project cumulative effects between the Proposed Development and the offshore works to be undertaken as part of the wider Viking CCS Project.</p>
1.5.37	Applicant	<p><b>CA Guidance</b></p> <p>Reference to this was made at the CAH1. Paragraph 19 provides that any potential risks or impediments to the scheme have been properly managed. However, as yet, no evidence has been submitted as to whether the necessary consents for the offshore elements of the scheme will be forthcoming. Such detail was very clearly provided from the outset in the Net Zero Teesside application and recent decision from the Secretary of State. Without these consents, the pipeline can never be used. Why should the absence of such matters (or even reference of progress) not be considered to be a “potential risk” or an “impediment”?</p>	<p>The Applicant has updated (Revision A) the Consents and Agreements Position Statement (<b>document reference 7.2</b>) to include further detail of the necessary consents and licences required for the offshore elements of the wider Viking CCS Project. The Bridging Document <b>[APP-128]</b> also includes details of further infrastructure that would require to be built as part of the wider Viking CCS Project. Table 1 and section 5 of that documents set out the detail of the new infrastructure that would be constructed offshore and the consenting regimes that would apply to that. The Applicant does not consider there to be any reason to consider that those consents will not be granted and does not consider this to be a potential risk. In practice, the Applicant would not construct the Proposed Development without certainty that it will be able to store the carbon dioxide offshore.</p>

**Table 6: Q1.6 Cultural Heritage**

ExA-Q1.6	Question to	Question	Applicant response
<b>Above ground heritage assets</b>			
1.6.1	Historic England Lincolnshire County Council	<p><b>Designated Heritage Assets</b></p> <p>Relevant Representations [RR-050] [RR-041] mainly focus on archaeology. In respect of above ground designated heritage assets, please confirm:</p> <p>1) Whether the methodology to identify heritage assets and assess the construction/ operation impacts upon them is appropriate and complete?</p> <p>2) Whether the Applicant's assessment of the significance of each individual heritage asset and the subsequent reporting/ estimating of the effects on each is satisfactory [APP-050, Table 8-10]?</p> <p>3) Set out in each instance (each asset on its own) whether the less than substantial harm predicted by the Applicant would be outweighed by the public benefits of the Proposed Development.</p> <p>4) If there are any areas where there is disagreement with the Applicant, specify which assets are involved and the reasons for disagreement.</p>	
1.6.2	Historic England Lincolnshire County Council	<p><b>Desk-Based Assessment (DBA)</b></p> <p>In setting out the approach to the assessment, there are several occasions [APP-050, 8.5.24 and 8.5.31 as examples] where a number of heritage assets have been named but conclusions are reached via the DBA that only a few would be affected. Are the conclusions of the DBA robust and with those few assets that have been identified as having impacts upon them?</p>	
1.6.3	Applicant	<p><b>Conclusions in the DBA</b></p> <p>For a number of assets [APP-089, Paragraphs 5.2.11, 5.2.14, 5.2.17, 5.2.20] it is concluded that there would not be any significant effects. However, there is no explanation for why such a conclusion is reached other than distance. The rationale for not taking the assets forward is not clearly set out, particularly in relation to noise, visual effects, traffic and transport impacts. Please elaborate on the reasons why a proportion of the assets have been immediately excluded from assessment.</p>	<p>The DBA presented within ES Volume IV Appendix 8.1 [APP-089], considers all assets within the 500m Study Area, and designated assets up to 2km. Each asset has been considered on a case-by-case basis, examining its setting to determine the potential for significant effects due to temporary construction works, including noise, dust, construction traffic and the siting of trenchless construction compounds. Assets that are sufficiently distanced and/or well screened from the Proposed Development, and do not have a visual, spatial or functional relationship with the site of the Proposed Development which contributes to the ability to appreciate their significance or historic interest, have been screened out from further assessment. Having assessed each asset, the Applicant does not consider that any noise, visual effects, or effects related to changes in traffic volume or movement would result in changes to the settings of these assets that would alter or impede the ability to appreciate their significance or historic interest to the extent that it would be considered a significant effect.</p>
1.6.4	Applicant	<p><b>Temporary changes to setting</b></p>	<p>The overall pipeline construction programme of the Proposed Development is expected to last approximately 15 months with the laying of the pipeline planned predominantly during the late</p>

ExA-Q1.6	Question to	Question	Applicant response
		<p>The DBA reports [APP-089, Paragraph 5.2.23] that <i>"It is not considered likely that the Proposed Development will result in any significant effects through temporary change to setting during construction."</i> However, it is not clear how long the 'temporary change' would endure for. In all instances where this phrase is used, can the Applicant set out the anticipated duration over which the setting of a heritage asset would be subject to construction effects AND over what duration would the Applicant consider effects would be of significance worthy of assessment?</p>	<p>spring, summer and early autumn (paragraph 3.12.12 in ES Chapter 3: Description of the Proposed Description [APP-045]). The typical duration of construction activities in any one location are indicated in Table 3-5 [APP-045] as a total average duration of approximately seven months. Therefore, the assessment assumes that the setting of each heritage asset would experience temporary effects for an expected duration of approximately seven months in any one location. The assessment considers the nature (type and scale) of the activity, the setting in which the activity takes place and the contribution of the setting to the significance or historic interest of the asset, together with the duration and nature (transient or otherwise) of the activity.</p> <p>Duration as a factor in creating a significant effect is dependent on the specific sensitivity of the asset (i.e. its ability to absorb change) and/ or the nature of the activity. This was taken into consideration in the assessment. The Applicant does not consider that the activities proposed, or the assets' sensitivity would result in any significant effects.</p>
1.6.5	Applicant	<p><b>Relevance of physical screening to setting</b></p> <p>The DBA appears to place a high amount of relevance to physical screening [APP-089, Paragraphs 5.2.25, 5.2.26, 5.2.29, 5.2.93] when considering the potential impacts upon setting. The ExA is concerned that the concept of setting may have been constrained or limited to purely visual interactions between the asset and the Proposed Development. What reassurances can the Applicant give to the ExA that the cultural and historical elements of setting have equally informed the assessment as to whether impacts would occur or not at this sifting stage of the DBA?</p>	<p>The assessment in the DBA [APP-089] has followed the advice in the Historic England Good Practice Advice in Planning 3 (GPA 3) in considering the potential impacts on setting. Setting is defined in the NPPF and comprises the surroundings in which a heritage asset is experienced. This includes cultural and historic elements as well as visual aspects and views. The assessment follows the staged approach outlined in GPA3; first identifying which heritage assets and their settings have potential to be affected by the Proposed Development, then assessing the contribution made by setting to the significance of the assets. The assessment then considers the effects of the Proposed Development upon setting and its contribution to significance. The Applicant can therefore reassure the Examining Authority that the concept of setting as applied in the DBA has not been constrained or limited to purely visual interactions between the asset and the Proposed Development.</p> <p>In the examples raised, the setting of these churches relates to the churchyards in which they are experienced and the surrounding parishes with which they share a visual and functional relationship. The nature of the Proposed Development, being a pipeline located within largely agricultural land, means that neither its construction nor its operation would have any potential to affect the ability of these churches to conduct their function as a religious centre, or to perceive their historic administrative function. None of the three churches are identified as experiencing significant effects from noise and vibration during construction or operation in ES Chapter 13: Noise and Vibration [APP-055]. Therefore, only the visual impacts of construction, operation and commissioning are considered in the assessment in the EIA.</p>
1.6.6	Historic England Lincolnshire County Council	<p><b>Relevance of physical screening to sifting judgements</b></p> <p>The DBA [APP-089, Paragraph 5.2.65, 5.2.95] identifies 155 assets within the 2km study area but narrows this list substantially by stating: <i>"The remaining assets have been scoped out of the assessment of the baseline as they are sufficiently distant and screened from the DCO Site Boundary."</i> It is noted that of the heritage assets identified, only eight of these have been taken forward for assessment in the Environmental Impact Assessment (EIA) [APP-050, Tables 12 and 13].</p> <p>Do the heritage consultees have any concerns regarding the Applicant's use of distance and screening judgements to determine whether or not an impact upon an asset's setting</p>	

ExA-Q1.6	Question to	Question	Applicant response
		would occur and ultimately the level of assessment that has occurred in the ES?	
1.6.7	Applicant	<p><b>Louth Canal</b></p> <p>The DBA [APP-089, Paragraph 5.2.56] considers no effects would occur upon the setting of the Louth Navigation because of the use of a trenchless crossing technique. However, it is not clear what type of technique would be used and the requirements thereof. For example, if Horizontal Directional Drilling (HDD) is to be used, a launch and reception compound would need to be created. There appears no information as to the distance such pits would be away from the asset or what impacts (noise, visual, vibration etc) such pits may cause to the asset. This needs to be presented clearly in order the DBA conclusions to be justified.</p>	<p>The DBA [APP-089] paragraph 5.2.56 considers no effects would occur on the settings of Salter Fen Lock [472] and Willows Lock [456], both listed Grade II, on the Louth Navigation, due to use of a trenchless crossing technique.</p> <p>The Louth Canal crossing is included in ES Volume IV Appendix 3-2: Crossing Schedule [APP-069] as Item No. 193. The crossing is proposed to be constructed using Horizontal Directional Drilling (HDD) of approximately 540m length, combining crossings of the Louth Navigation and the River Ludd (Crossing Schedule, Item No. 194). The launch and reception compounds north and south of the waterways would be located approximately 1.1km to 1.2km from Willows Lock (Asset 456) respectively, and approximately 150m to 450m from Salter Fen Lock (Asset 472). The working area and excavations required for the HDD process are outlined in ES Volume II Chapter 3: Description of the Proposed Development [APP-045] paragraphs 3.12.185 – 3.12.186.</p> <p>The immediate settings of Salter Fen Lock and Willows Lock comprise the Louth Navigation, and the wider setting comprises the rural historic landscape. While the construction activities would introduce noise as well as the visual change presented by the presence of the launch and receptor pits and compounds, into the wider setting, the immediate setting of the assets would remain unchanged. The duration of the impact would be short (approximately 3 months for installation of a usual HDD crossing). The resultant change in the ability to appreciate the assets' significance would be very low. The Applicant does not, therefore, consider that construction of the Proposed Development is likely to result in any significant effects upon either asset through temporary changes to setting.</p>
1.6.8	Applicant	<p><b>EIA Criteria</b></p> <p>When looking at the Figures contained within Appendix 8-1 [APP-089] and cross-referencing the numbered assets with the analysis in the DBA, it has become apparent that perhaps not all effects arising from the Proposed Development may have been considered. For example, numbered assets 409, 373 and 581 (to name but a few) are geographically close to the Order Limits and therefore the construction working corridor. Given the proximity, the setting of these assets may be affected by noise, dust, construction traffic, the siting of trenchless crossing compounds etc and yet there is no information regarding this. Applicant to explain why it was considered appropriate to not take such assets through to the EIA [APP-050] on this basis.</p>	<p>The DBA [APP-089] considers all assets within the 500m Study Area, and designated assets up to 2km. The assessment has followed the advice in Historic England's Good Practice Advice in Planning 3 (GPA 3) in considering the potential impacts on setting. Each asset was considered on a case-by-case basis, examining its setting to determine the potential for significant effects due to temporary construction works, including noise, dust, construction traffic and the siting of trenchless construction compounds.</p> <p>With regards to the specific examples raised, in the case of asset 581 The Groves, the asset was scoped out from assessment as it is screened from potential views of the Proposed Development by large modern sheds. This existing screening means that the construction of the Proposed Development would not obscure views from the farmhouse of agricultural land which would be considered to contribute to the appreciation of its significance as a historic farmstead. As a working farmstead, the asset already experiences noise from movement of machinery and other agricultural activities. Any noise, dust or traffic associated with construction would not result in any measurable change in the ability to appreciate the asset's significance.</p> <p>Similarly, asset 409 Mickling Barf is well screened from the Proposed Development by mature trees, planting and the A18 (Barton Street). Any noise, dust or traffic associated with construction are not considered likely to amplify the existing conditions relating to the asset's proximity to the A18. The construction and operation of the Proposed Development would not alter the ability to appreciate the asset's significance, which is largely derived from architectural interest as a mid-20<sup>th</sup> century architect's house.</p> <p>In the case of asset 373 Hawerby Hall, the pipeline is located within agricultural land which makes some contribution to the rural wider setting of the asset but does not help inform the historic or architectural interest as a late 18<sup>th</sup> century house from which the asset's significance is derived.</p>



ExA-Q1.6	Question to	Question	Applicant response
			<p>Therefore, the Applicant considers that there is no potential for significant effects and hence these assets are all scoped out of further assessment in the EIA.</p> <p>Having applied the guidance, the Applicant considers that other heritage assets that are close to the Order Limits also have similar factors to these examples and have assessed them accordingly.</p> <p>The Applicant considers, therefore, that all assets have been adequately assessed and those where potential for significant effects has been identified have been taken through to the EIA [APP-050].</p>
1.6.9	Historic England Lincolnshire County Council	<p><b>Historic Landscape Character</b></p> <p>The Applicant has not undertaken detailed assessment of the Historic Landscape Character areas [APP-050, Paragraph 8.5.17] on the basis there would not be any significant impacts. Are these conclusions acceptable and, if so, why?</p>	
1.6.10	Applicant	<p><b>Landscaping and setting</b></p> <p>The ES [APP-050, Paragraph 8.7.4] appears to imply that the landscaping proposed as part of the Proposed Development is not considered a permanent effect upon the setting of heritage assets. Why is this the case?</p>	<p>Proposed landscaping along the pipeline is largely confined to reinstatement of landform and hedgerows and replacement of trees, together with screen planting at the Block Valve Stations and the Theddlethorpe Facility Option 2. Changes to the historic landscape associated with the reinstatement proposals would be temporary short-term impacts resulting from the removal of vegetation prior to reinstatement. There would be no permanent severance of the historic landscape features due to construction of the pipeline. This is assessed as no change, and a neutral effect. The mitigating effect of the proposed screen planting at the Theddlethorpe Facility Option 2 is considered in the assessment as a permanent effect (see also response to 1.6.11 below).</p>
1.6.11	Applicant	<p><b>Moderate Adverse Effects</b></p> <p>The ES [APP-050] identifies significant adverse residual effects would occur during construction (receptors 129, 270, 282, 580 and 590) and no mitigation is subsequently proposed to reduce these effects. Furthermore, receptor 580 would experience permanent moderate adverse effects during operation, again with no mitigation proposed. Explain with reasons.</p>	<p>The moderate adverse effects identified arise from changes to the settings of the assets due to temporary construction activities, and operation of the scheme. In the case of temporary effects relating to construction activity, no additional mitigation is proposed as the nature of the works is transient and would reduce as construction progresses and land is reinstated. For permanent effects relating to the presence of the Theddlethorpe Facility within the setting of heritage assets, no additional mitigation is proposed beyond the embedded landscape mitigation, which comprises screen planting. In line with GPA3 paragraph 40, which advises that screen planting can have as intrusive an effect on setting as the development it seeks to mitigate, the Applicant considers that additional mitigation beyond the proposed screen planting would not further reduce or remove the impacts to the setting of heritage assets. Any additional planting or bunding could cause additional impacts which would further erode the setting.</p>
<b>Archaeology</b>			
1.6.12	Applicant	<p><b>Bores near archaeology deposits</b></p> <p>In amongst the embedded mitigation measures [APP-050, Paragraph 8.6.4] the ExA note that there is no restriction on the use of HDD or auger bores (or equivalent) in proximity to areas of archaeological potential. Should such methods of construction be reviewed and or prevented as part of embedded mitigation measures to prevent damage or loss of archaeological assets?</p>	<p>Where HDD or auger bores (or equivalent) are proposed in proximity to areas of archaeological potential, the Detailed Archaeological Mitigation Strategy (DAMS) and accompanying Overarching Written Scheme of Investigation (OWSI) will provide for appropriate archaeological investigation and recording in starter/receptor pit/compound locations. The HDD/auger bore profiles would be designed to pass beneath potential archaeological horizons in order to avoid damage to or loss of archaeological assets that would otherwise occur as a result of open cut trenching. The Applicant does not consider that it is necessary to add any general restriction on</p>

ExA-Q1.6	Question to	Question	Applicant response
			HDD or auger bores or equivalent as an embedded mitigation measure to prevent damage to or loss of archaeological assets.
1.6.13	Applicant	<p><b>Intrusive investigations</b></p> <p>There are calls [RR-041] [RR-050] for detailed archaeological work to take place now and during the Examination so as to inform any post-consent mitigation. Does the Applicant intend to undertake any work now to reassure IPs and reaffirm its own position at the close of the Examination?</p>	<p>The Applicant has undertaken a geophysical survey of the majority of the suitable land within the Order Limits and is currently remobilising to complete the remaining small amount of missing areas (subject to weather conditions). The results of this have been used to develop a comprehensive trial trenching programme. A Written Scheme of Investigation <b>[AS-001]</b> associated with the proposed trenching works has now been agreed with the relevant county archaeologists and trial trenching is set to commence in April 2024. A revised written Scheme of Information is currently being agreed with the LPA's and a revised version will be submitted at Deadline 2.</p>
1.6.14	<p>Historic England</p> <p>Lincolnshire County Council</p> <p>All Local Authorities</p>	<p><b>Written Scheme of Investigation (WSI)</b></p> <p>The DCO application is accompanied by a WSI [APP-091] [AS-001]. For the purposes of the Examination:</p> <ol style="list-style-type: none"> <li>1) Is the WSI a comprehensive and robust approach to investigating the potential for archaeological deposits?</li> <li>2) Does the WSI contain sufficient strategies and mitigation measures to sensitively explore, retain or remove archaeological deposits?</li> <li>3) Explain whether amendments are required to the document and how those amendments would be of a benefit to the scheme</li> </ol>	

**Table 7: Q.1.7 Draft Development Consent Order**

ExA-Q1.7	Question to	Question	Applicant response
<b>Interpretation and Articles</b>			
1.7.1	All Local Authorities	<p><b>Definition of commence</b></p> <p>Are the local authority's content with the definition of 'commence' as set out in the dDCO [AS-008] and the scope of works included/ excluded within it?</p>	
1.7.2	Applicant	<p><b>Commence</b></p> <p>This definition does seem rather wide, and some limitations would seem to be appropriate. Restricting commencement until after the offshore elements have been consented and until the Landscape Plan (Requirement 11) has been resolved and in place are examples. Please could the Applicant consider the position?</p>	<p>As set out in paragraph 1.6.9 of the Explanatory Memorandum [APP-007] (Revision C has been submitted at Deadline 1 (<b>document reference 2.2</b>)), the definition of “commence” is drafted to enable the undertaker to carry out certain preparatory works prior to the submission of relevant details for approval under the requirements. The works that are excluded from the definition of commencement are either <i>de minimis</i> or have minimal potential for adverse impacts. As such, they are activities that do not need to have detailed controls in place prior to them being undertaken.</p> <p>The UK Government has set an ambitious target for the delivery of carbon capture and storage projects, including this application. To be able to achieve this, the Applicant will need to be able to carry out certain activities at the same time, before the main construction phase of the project commences. For example, some vegetation clearance can only be undertaken outside of breeding bird periods. The Applicant considers that it would be disproportionate to prevent that work from being undertaken because the final landscaping details for permanent infrastructure, such as the block valve stations, had not been fully agreed as part of the discharge of Requirement 11 and the LEMP. That could result in a whole season being lost.</p> <p>This approach is common in DCOs to allow these nationally significant schemes to be commenced (and therefore delivered) quickly. The definition of “commence” in the draft DCO is that same as the definition recently approved by the Secretary of State in The HyNet Carbon Dioxide Pipeline Order 2024. It is also similar in scope to the definitions approved in the Southampton to London Pipeline DCO, the A47 Wansford to Sutton Order 2023, the Thurrock Flexible Generation Plant Order 2022 and others.</p> <p>As set out elsewhere, the Applicant considers that it is inappropriate to include a requirement restricting activities permitted under the draft DCO until the offshore elements of the wider Viking CCS Project have been consented. That approach was not taken in the Net Zero Teesside DCO, or the HyNet DCO.</p> <p>The Applicant accordingly has not proposed any change to this definition, which it submits is necessary and well-precedented.</p>
1.7.3	Applicant	<p><b>Definition of existing pipeline</b></p> <p>The definition of 'existing pipeline' in the dDCO [AS-008] makes no reference to the LOGGS. What is the reason for this?</p>	<p>The definition of “existing pipeline” is drafted by reference to the pipeline construction authorisation that was issued by the Secretary of State on 2 April 1987. This is the pipeline construction authorisation for the LOGGS pipeline. The Applicant considers this to be an appropriate way to draft this definition.</p>
1.7.4	Applicant Local Authorities	<p><b>Definition of maintain</b></p> <p>The definition of 'maintain' includes the ability to divert or alter.</p> <p>1) Are Local Authorities' content with this?</p>	<p>1) N/A</p>

ExA-Q1.7	Question to	Question	Applicant response
		<p>2) Does this give the Applicant the ability, post-construction, to divert parts of the Proposed Development, thus potentially giving rise to further environmental effects?</p> <p>3) Please provide further justification in relation to the need for 'improve'.</p> <p>4) Please explain how and why these would be necessary in relation to maintenance of the proposed development.</p>	<p>2) This power would allow the Applicant to divert part of the development post-construction, if it was required as part of its maintenance. The ability to "divert or alter" the authorised development is included in case a circumstance arises where a repair or maintenance is needed, but it is not possible to re-lay a section of the pipeline in precisely the same location. In those circumstances, it could require a localised diversion and the expectation is that this would be in very close proximity or adjacent to the original location. It would not be a significant diversion on to completely new land.</p> <p>The definition of "maintain" within the Draft DCO [AS-040] (Revision C has been submitted at Deadline 1 (<b>document reference 2.1</b>)) makes clear that it cannot include the replacement of the entirety of the new pipeline. Article 5(2) restricts any maintenance to being within the limits of deviation (i.e. within the Order Limits) and does not authorise diversion of the development which would result in the authorised development varying from the description in Schedule 1 of the draft DCO.</p> <p>3) If there was a fault with the pipeline that could be prevented from recurring by an upgrade to a small section of the pipeline, then this would be considered an improvement. The drafting allows for this possibility. As noted in point 2) above, the definition of "maintain" expressly excludes a renewal of the entirety of the new pipeline.</p> <p>4) The Applicant has set this out in points 2) and 3) above.</p>
1.7.5	Applicant	<p><b>Definition of maintain</b></p> <p>The dDCO [AS-008] provides the terms 'abandon or decommission' within the definition of maintain. The EM [APP-007] explains this definition is used in other made DCOs.</p> <p>1) Explain why it is a relevant definition for this Order.</p> <p>2) Explain what this means from a practical sense.</p> <p>3) How would 'abandon' be reported, notified or accounted for?</p> <p>4) How would abandonment interact with the compensatory regime?</p>	<p>1) and 2) The term 'abandon' is commonly used in respect of pipelines and is synonymous with the decommissioning process. The terminology is believed to have arisen from the oil and gas industry, particularly offshore, and then been applied to onshore pipelines for other uses. For example, the Petroleum Act 1998 and the Energy Act 2008 both refer to "abandonment" of offshore installations when they are at the end of their operational life and require programmes to be approved by the Secretary of State for that purpose.</p> <p>When a pipeline reaches the end of its operational life, the preferred method for decommissioning it is often to make it safe and leave it in situ. The obligations of the pipeline owner to ensure that this remains safe do not necessarily cease at that point, in the same way that they might for other forms of development. This process of making safe a pipeline, whilst retaining residual obligations for it, is often referred to as 'pipeline abandonment'. The Applicant has therefore retained the wording in the definition of maintain.</p> <p>3) Requirement 16 of the draft DCO requires the undertaker to submit a Decommissioning Environmental Management Plan (DEMP) to the relevant planning authority for approval six months prior to the planned permanent cessation of operation of the Proposed Development. The DEMP must include the details of any below ground apparatus to be left in situ.</p> <p>4) The land or rights in land sought by the Applicant through its compulsory acquisition powers include those necessary for the decommissioning of the pipeline. In respect of the pipeline itself, the Applicant is seeking to acquire freehold of the subsurface where the pipeline is situated. There would be no new land requirements to facilitate the pipeline being left in situ.</p>



ExA-Q1.7	Question to	Question	Applicant response
			The Applicant will already have settled any compensation claims relating to the compulsory acquisition of these land or rights.
1.7.6	Applicant Local Highway Authorities National Highways	<b>Definition of highway authority</b> Does the definition of highway authority [AS-008] need to separate National Highways (NH) from the local highways' authority?	The term 'highway authority' is used within the draft DCO in relation to street work powers which are not proposed or sought over the Strategic Road Network. However, the Applicant agrees it may be desirable to bring the strategic authorities within the definition to aid in the drafting of requirements and the protective provisions. This change has been made in Revision C the <b>Draft DCO</b> submitted at Deadline 1 ( <b>document reference 2.1</b> ).
1.7.7	Applicant	<b>Definition of Associated Development</b> Despite what is said in the EM [APP-007, Paragraph 1.6.162], there is no definitive identification of what constitutes associated development in the dDCO [AS-008], only a definition of ancillary development in Schedule 1 Part 2. Make clear both in the dDCO and in writing separately the full extent of what is being considered as associated development in this project.	The Applicant has updated the Draft DCO (Revision C <b>document reference 2.1</b> ) and Explanatory Memorandum (Revision C <b>document reference 2.2</b> ) accordingly.
1.7.8	Applicant	<b>Street Works</b> Under the definitions and interpretation of this Order, is the Applicant considering that any HDD beneath a highway/ strategic road network would constitute 'street works'?	The Applicant does not consider the installation of the pipeline under a highway / the strategic road network to constitute 'street works', as the works would be outside of the zone of influence of the street. The subsurface land affected would therefore not be considered to form part of the street.
1.7.9	Applicant	<b>Pig Receiver</b> Can the Applicant confirm whether the pig receiver referred to [APP-045, Paragraph 3.6.11] would require an additional DCO application or handled as a variation?	The permission to develop the pig receiver would be part of a new development or planning permission, whichever was necessary for the expansion of the Viking CCS Project at that time. This would be fact specific to the development for which permission was sought.
1.7.10	Applicant	<b>Article 6</b> The limits of deviation [AS-008] appear to allow the Applicant not just flexibility, but also judgemental discretion in deciding the depth of which the pipe would be buried. The Applicant should set out: 1) What ground conditions would make burial at 1.2m depth impracticable. 2) The Bridging Document [APP-128, paragraph 3.2.3] refers to a " <i>minimum depth of 1.2 metres</i> ". There is no caveat to this. Has there been included in the consultation, a clear message that this depth might be reduced? 3) There is a further possibility of reducing the depth allowed by Article 6(2). Why is the reference to the SoS as opposed to the relevant local planning authority in consultation with Statutory Undertakers? 4) Whether any organisation would be notified of instances where the desired burial depth was not achieved.	1) and 2) The main constraints that could require a deviation from the intended depth of at least 1.2m are geological features and existing services. Until the Applicant has undertaken pre-commencement surveys, it cannot be certain of the depth of potential geological features that could prevent burial at this depth. Older services are often not mapped accurately meaning the Applicant cannot be certain of their location or depth at this time.  The Applicant will endeavour to achieve the minimum depth in all agricultural locations in order that normal farming use can be resumed over the pipeline, however until the final pre-commencement surveys are complete, and the final routing is known, the potential need for minor deviations from that cannot be ruled out. The Applicant has discussed this possibility with all landowners/occupiers along the route that it is currently engaging with. The potential for deviation is reflected in the commercial heads of terms that have been offered to those clients which include, amongst other things: <ul style="list-style-type: none"><li>• An obligation on the Applicant to engage with the landowner where the target depth cannot be achieved, with a view to reaching a mutually agreeable solution.</li><li>• An obligation on the Applicant to pay additional compensation where previous agricultural activities cannot be resumed as a result of the Proposed Development.</li></ul>

ExA-Q1.7	Question to	Question	Applicant response
		<p>5) It is noted that the depth of the pipeline has been raised as an issue by a number of farming businesses. Would landowners be under any greater burden should the target burial depth not be achieved?</p> <p>6) What the meaning of 'convenient' is in Article 6(c) and would such convenience result in any materially different or worse environmental effects to those predicted in the ES?</p> <p>7) The EM [APP-007, paragraph 1.6.29] refers to a minimum 5m depth and yet this does not appear written into the dDCO. Explain with reasons.</p>	<p>3) As the Secretary of State is the party responsible for fixing the core project design envelope when granting development consent, it is considered appropriate that the Applicant would seek authorisation from the Secretary of State to re-open and amend the envelope, rather than from the local planning authority.</p> <p>The drafting of this article follows precedent from the Southampton to London Pipeline DCO and the HyNet DCO.</p> <p>4) The Applicant does not consider there to be any need for notification in the event that a depth of 1.2 metres below surface of the ground was not achieved. In those circumstances, the Applicant would still be restricted to an upper depth of 0.7 metres. This depth is within the parameters assessed in this Application, is a safe burial depth for the pipeline and would allow ordinary agricultural activities to resume above the pipeline.</p> <p>5) Please see the response to items 1) and 2) above.</p> <p>6) 'Convenient' allows for some flexibility to deliver the Proposed Development in the most practical and sensible manner without having to demonstrate that any deviation is 'necessary' rather than advantageous. In engineering terms, a deviation may not be strictly necessary because it can be made to work, however a deviation may prevent a sub-optimal solution being imposed. For example, a deviation may allow a reduction in impacts on ecology or other undertakers' assets to be achieved. The Applicant notes that this is the standard wording for this form of Article and was used in article 6 of the Southampton to London Pipeline DCO and is included in Article 6 of the recently granted HyNet Carbon Dioxide Pipeline Order 2024.</p> <p>7) Paragraphs 1.6.29 and 1.6.30 of the Explanatory Memorandum [APP-007] set out the practical depths that the pipeline is anticipated to be installed to for different installation techniques. The Applicant does not consider it necessary or appropriate to include different limits of deviation for different installation techniques within the draft DCO.</p> <p>Until the Applicant has completed its pre-commencement surveys, it cannot be certain exactly what ground conditions exist in every specific location or rule out unexpected structures or services. The Applicant notes that going deeper than is required would incur unnecessary cost and time in construction and there is accordingly no incentive to do so. Any deeper works would therefore be driven by necessity to address a specific issue.</p>
1.7.11	Applicant National Highways	<p><b>Articles 8 and 9</b></p> <p>Article 8(3) and Article 9(2) of the dDCO [AS-008] allow the Applicant to enter onto and undertake works in streets outside of the Order Limits.</p> <p>1) Why is this power necessary?</p>	<p>1) and 2) The need to use the power within these provisions to undertake works in streets outside of the Order Limits would arise if it was identified post-consent that there was a need to undertake works for additional streets that have not been identified within the draft DCO. Such a need would be likely to come out of discussions with the local highways authority.</p> <p>These articles are based on the drafting in Articles 10 and 11 of the Southampton to London Pipeline DCO and are in identical terms to Articles 10 and 11 of the HyNet DCO.</p>

ExA-Q1.7	Question to	Question	Applicant response
		<p>2) What circumstances would require works outside of the Order Limits?</p> <p>3) What notification would be given to persons that have an interest or occupy property on such streets?</p> <p>4) Have the effects of such out-of-limit works featured within the ES?</p> <p>5) The notice period of 28 days at Article 8(5) and Article 9(5) seems limited. Can the Applicant consider a longer period?</p> <p>6) The Applicant proposes to carry out street works (within the meaning of the New Roads and Street Works Act 1991) beneath the Strategic Road Network (SRN). The ExA note that NH state [RR-072] that these works are not included in Schedule 3 of the draft DCO. Please clarify the position?</p>	<p>3) The standard industry practice would be for a leaflet drop, or advance works signage being erected a few weeks in advance. The Applicant's contractor would be expected to follow this practice.</p> <p>4) At this stage, the Applicant does not know if this power would ever require to be used and where that might be. There has therefore been no specific assessment within the ES. However, the Applicant notes that the consent of the streets authority is required before such works could be undertaken. The Applicant considers that such consent would be highly unlikely to be given if the works proposed were so substantial that they would give rise to significant environmental effects that have not been accounted for in the ES.</p> <p>5) The Draft DCO (<b>document reference 2.1</b>) has been amended (Revision C) to extend this period to 42 days. The Applicant confirmed this to the various local planning authorities in a call on 10 April 2024.</p> <p>6) As noted in response to WQ 1.7.8, the Applicant does not consider the installation of the pipeline under the strategic road network to constitute 'street works', as the works would be outside of the zone of influence of the street. The subsurface land affected would therefore not be considered to form part of the street. The Applicant is continuing to engage with National Highways to fully understand their position</p>
1.7.12	Applicant Local Authorities	<p><b>Article 9 - Power to alter layout etc, of streets.</b></p> <p>This is a wide power, authorising alteration etc. of any street within the Order Limits. Please provide further justification as why this power is necessary. Has consideration been given to whether or not it should be limited to identified streets?</p>	<p>The Applicant has included specific streets within Schedule 3 of the draft DCO where this power could be exercised without further approvals. The more general powers within this article are subject to the Applicant first obtaining consent of the street authority to undertake the works. This is considered an appropriate mechanism to apply checks and balances on the use of the power. As noted in response to WQ1.7.11, the need to use this power would arise if it was identified post-consent that there was a need to undertake works for additional streets that have not been identified within the draft DCO. Such a need would be likely to come out of discussions with the local highways authority.</p> <p>This article is based on the drafting in Article 10 of the Southampton to London Pipeline DCO and is in identical terms to Article 11 of the HyNet DCO.</p>
1.7.13	Local Authorities	<p><b>Article 10</b></p> <p>Do the Local Highway Authorities have any concerns or objections in relation to the Applicant's proposed disapplication of legislative provisions set out under Article 10 of the dDCO [AS-008]?</p>	
1.7.14	Applicant Local Authorities	<p><b>Articles 11 and 12</b></p> <p>Articles 11 and 12 [AS-008] allow for the temporary stopping up of streets and rights of way. The Explanatory Memorandum [APP-007, paragraph 1.6.53] suggests pedestrian access will be maintained. However, the ExA understands that the public lose the right to pass or repass over a stopped-up path or road.</p>	<p>1) The Applicant has amended the terminology in the Draft DCO (<b>document reference 2.1</b>) and Explanatory Memorandum (<b>document reference 2.2</b>) to refer to "temporary closure", rather than "temporary stopping-up", which it considers is clearer.</p> <p>The Applicant notes that Article 11(2) requires an alternative public right of way to be put in place before a public right of way can be restricted and Article 12(3) requires the undertaker to provide reasonable access for pedestrians going to or from premises abutting the street.</p>

ExA-Q1.7	Question to	Question	Applicant response
		<p>1) Does the Applicant consider 'temporary stopping up' to be the correct terminology and, if so, why?</p> <p>2) If 'temporary stopping up' is not the correct terminology, explain what legislation/mechanisms will be used to temporarily close the public highway to vehicles whilst allowing pedestrian access.</p> <p>3) Again, please reconsider the notice period at Article 11(5) and 12(6)?</p>	<p>2) Article 12(1)(a) gives the Applicant the power to divert traffic or a class of traffic from the street. As noted above, Article 12(3) requires the undertaker to provide reasonable access for pedestrians going to or from premises abutting the street.</p> <p>3) The Draft DCO (<b>document reference 2.1</b>) has been amended (Revision C) to extend this period to 42 days. The Applicant confirmed this to the various local planning authorities in a call on 10 April 2024.</p>
1.7.15	Applicant	<p><b>Article 15</b></p> <p>The ExA query the scope of the powers afforded under Article 15 of the dDCO [AS-008]. The Explanatory Memorandum [APP-007, paragraph 1.6.65] implies that the power allows the temporary use of private roads in the Order Limits without the need for the undertaker to acquire a permanent right of way. However, the ExA note that the article would allow a temporary use of a private road for both construction and maintenance of the development. If the Applicant can enter onto private roads at any time to maintain the development, why is this felt not to constitute a permanent right of way?</p> <p>Article 15 of the dDCO provides powers to allow any private road within the Order Limits to be used temporarily during the construction and maintenance of the proposed development. Please explain why this is necessary and why all private roads in the Order Limits are subject to this power.</p>	<p>Article 15(1) provides “<i>that the undertaker may use any private road... for the passage of persons or vehicles</i>”. This creates a right to take access over a private road which would not otherwise exist does not restrict in any way the rights of other users. The Applicant considers that this is preferable, and a lesser interference, to either taking temporary possession on an exclusive basis under articles 32 or 33 or acquiring permanent rights in land compulsorily.</p>
1.7.16	Applicant	<p><b>Article 19</b></p> <p>Authority to survey and investigate the land.</p> <p>1) Please justify and explain the need for that part of the wording that departs from model provisions, in particular in relation to authorisation of surveys on land outside, but adjacent to Order Limits. Provide examples of when and why such a power is necessary, reasonable and expedient. Furthermore, Article 19(2) does not actually require that permission is obtained from the relevant landowner, only that at least 14 days' notice must be given. Please review and provide justification.</p> <p>2) Please justify the allowance of works to be undertaken without the consent of the relevant highway authority (Article 19(5)) in the event that the authority withholds or delays their consent?</p>	<p>1) This power is required to ensure that necessary surveying can be carried out. Although surveys have been carried out so far, pre-construction surveys are required, and the Applicant requires to be able to carry those out to deliver the Proposed Development. The Applicant considers it appropriate for this power to include the ability to survey land outside the Order Limits that may be affected by the work. Examples of when this power might be exercised in this manner could include:</p> <ul style="list-style-type: none"> <li>a) Survey of land for protected species which are mobile.</li> <li>b) Access to establish connections to land within the Order Limits, for example to check hydrological connections.</li> <li>c) Surveys may be required not just to inform detailed design but for example by the Ecological Clerk of Works throughout construction or to respond to issues arising.</li> </ul> <p>The notice period of 14 days aligns with the notice period that an acquiring authority is required to give under sections 172 – 174 of the Housing and Planning Act 2016, which allow the authority to enter and survey land in connection with a proposal to acquire an interest in or a right over it.</p> <p>As set out at paragraph 1.6.82 of the Explanatory Memorandum [APP-007] this wording has considerable precedent including the recently made HyNet DCO article 22.</p>



ExA-Q1.7	Question to	Question	Applicant response
			<p>2) This provision in Article 19(7) that grants a deemed consent in the event that the highway or street authority fails to notify the undertaker of its decision within a certain time period is considered necessary to enable the undertaker to exercise its powers and undertake works in an efficient and expeditious manner and to give full effect to the power to carry out the Proposed Development, as provided for under section 120(5) of the 2008 Act. Following a meeting between the Applicant and the relevant local authorities on 10 April 2024, the Applicant has amended the Draft DCO (Revision C <b>document reference 2.1</b>) to extend this period to 42 days.</p>
1.7.17	Applicant	<p><b>Article 23</b></p> <p>This Article requires TP to be taken within five years of the date of the Order. Please clarify with reference to the provisions in Article 32, when such possession will cease?</p>	<p>Article 32(3) controls how long the undertaker can remain in possession of land that it has taken temporary possession of in accordance with Article 32. These provisions provide that the undertaker must not, without the agreement of the landowner, remain in possession of the land for more than one year after the date of completion of the part of the Proposed Development that the temporary possession relates to.</p>
1.7.18	Applicant	<p><b>Article 24</b></p> <p>Article 24 [AS-008] allows the undertaker to create new rights over land where that land might otherwise have to be acquired outright. It also, under 24(5) allows such rights to be transferred to a statutory undertaker.</p> <ol style="list-style-type: none"> <li>1) Set out fully why this is considered a fair and proportionate power for the Applicant to seek.</li> <li>2) Would the Applicant's ability to create and impose new rights and restrictions be regulated or governed in anyway?</li> <li>3) If a landowner is burdened with such rights that they deem too restrictive or unreasonable, would they be able to seek compensation and/or make a claim for blight?</li> <li>4) Why would this approach be more beneficial (to the Applicant and to the landowner) than acquiring land outright?</li> <li>5) Without acquiring the land, what right would the Applicant have to hand over rights it has created to a statutory undertaker without recourse to the person who has entitlement/ownership of the land?</li> </ol>	<p>Section 122 of the Planning Act 2008 allows development consent orders to be granted with powers to compulsorily acquire land and rights in land. These powers can only be included where the Secretary of State is satisfied that the conditions of section 122(2) and (3) have been met. These require, firstly, that the land is required for the development to which the development consent relates or is required to facilitate or is incidental to that development. Secondly, there must be a compelling case in the public interest for the land to be acquired compulsorily.</p> <p>1) The power sought by the Applicant in Article 24 of the Draft DCO <b>[AS-040]</b> would allow it to acquire rights or impose restrictive covenants over the order land. All of the rights sought by the Applicant are those required for the development or to facilitate it. The power sought by the Applicant is in accordance with section 122 of the Planning Act 2008.</p> <p>As set out fully within section 9 of the Statement of Reasons <b>[APP-010]</b>, the Applicant has given careful consideration to the land/rights required for the Proposed Development and has sought to balance the requirement to secure sufficient land to ensure its delivery, whilst also minimising land take. In general, acquisition of rights and imposition of restrictions will be a lesser interference with the private rights of a landowner than acquiring freehold ownership of their land. Acquiring rights in land, instead of ownership, can often provide the necessary rights for a development to be undertaken whilst allowing its previous use to be resumed by the owner.</p> <p>The Applicant has considered carefully whether for each plot shown on the Land Plans <b>[AS-049]</b> the compulsory powers that it requires. This detail is set out in section 9 of the Statement of Reasons <b>[APP-010]</b>. In respect of the pipeline corridor, which makes up the vast majority of the order land, the Applicant requires all estates and interests in the subsurface in which the pipeline would lie, together with a 'layer' of additional subsurface land around the pipeline itself to form a protective barrier. The proposed width of the subsurface acquisition is a maximum of 8m. In addition to that, the Applicant seeks powers under Article 24 of the Draft DCO <b>[AS-040]</b> to compulsorily acquire new rights (including restrictive covenants) for the benefit of the land acquired for the pipeline, including over the surface of the land above the pipeline. These rights will allow the Applicant to construct, operate and maintain the pipeline.</p> <p>The majority of the pipeline route is agricultural land and the rights and restrictions sought by the Applicant would not be inconsistent with its continued use for agriculture. The Applicant</p>

ExA-Q1.7	Question to	Question	Applicant response
			<p>therefore considers that this approach is more proportionate use of compulsory powers, and a lesser interference with landowners, than acquiring ownership of the land.</p> <p>2) Yes, the ability to create and impose new rights and restrictions is restricted by the terms of article 24 of the Draft DCO [AS-040]. Paragraph (1) states that the undertaker may acquire such rights “for any purpose for which that land may be acquired under article 22 (compulsory acquisition of land)”. The purpose set out in article 22(1) is that the land “is required to carry out or to facilitate, or is incidental to, the authorised development”.</p> <p>The undertaker could therefore not acquire any rights that were not necessary to construct, operate, maintain and decommission the Proposed Development. Section 9 of the Draft DCO sets out the rights and restrictions that the Applicant would look to acquire under article 24.</p> <p>Article 24(2) also contains a more specific restriction on the rights that the undertaker can acquire over certain plots shown on the Land Plans. This detail is set out in Schedule 7 of the Draft DCO.</p> <p>3) Yes, if the undertaker used the compulsory powers in article 24 to acquire rights or impose restrictions, then the landowner would be entitled to compensation. Section 125 of the Planning Act 2008 applies a range of provisions relating to compulsory acquisition to development consent orders, which would include an entitlement to compensation. Paragraph (4) of Article 24 confirms that Schedule 8 of the draft DCO has effect for the purpose of modifying compensation provisions to ensure that they apply to the compulsory acquisition or creation of rights, or imposition of restrictive covenants.</p> <p>As noted in paragraph 1.4.5 of the Funding Statement [APP-009], the Applicant believes that the risk of receiving a valid blight notice in connection with the DCO and the Proposed Development is low, but it has made provision for such costs should such a claim arise.</p> <p>4) As noted in point 1) above, the majority of the pipeline route is agricultural land and the rights and restrictions sought by the Applicant would not be inconsistent with its continued use for agriculture. This would therefore be a lesser interference with a landowner’s rights than acquiring ownership.</p> <p>5) Paragraph (5) or article 24 restricts the ability of the undertaker to transfer the power to acquire rights to the statutory undertaker by requiring the consent of the Secretary of State to be obtained before they can do so.</p> <p>The purpose of that provision is to allow the statutory undertaker to acquire the necessary rights if it needs to divert or relocate its apparatus as part of the Proposed Development being constructed. Without that power, and if agreement could not be reached with the landowner, a statutory undertaker may have to use its own statutory powers of compulsory acquisition to acquire the necessary land/rights. This would cause delay to the implementation of the Proposed Development.</p>
1.7.19	Applicant	<b>Article 32</b>	<p>1) This power allows the undertaker to take possession of land that is only required for construction of the Proposed Development, but which is not required on a permanent basis. The undertaker is then able to acquire permanently the land for the as-built scheme. Without</p>

ExA-Q1.7	Question to	Question	Applicant response
		<p>The EM [APP-007, Paragraph 1.6.23] sets out that the drafting for Article 32 was based on the model provisions but has been subject to several modifications. The ExA require the following:</p> <ol style="list-style-type: none"> <li>1) Bearing in mind Human Rights principles, why is it necessary and proportionate to allow early access onto land in advance of such land being acquired permanently?</li> <li>2) Explain how leaving permanent works and permanent mitigation on land would only constitute temporary possession?</li> <li>3) No reasons are given for the modifications or why the Order would benefit from such modifications, or that the modifications represent a proportionate use of powers. Provide justification.</li> <li>4) The notice period at Article 32 (2) is 28 days. It is noted that a period of three months has been agreed in other Examinations.</li> </ol>	<p>this power, the undertaker would be required to permanently acquire all land that it required in the construction phase, even if this was not required for the operational phase. The Applicant considers that this would be a greater interference with the private rights of landowners. Article 32 therefore enables a more proportionate exercise of compulsory powers and is therefore in the public interest.</p> <p>2) Article 32(4) sets out certain works that the undertaker is not required to remove if they were undertaken as part of temporary possession. These include drainage works, road surface improvements or ground strengthening works, which are all generally considered beneficial to the landowner and that it would be undesirable to remove. Sub-paragraph (e) also ensures that measures to protect the apparatus of statutory undertakers does not need to be removed.</p> <p>3) Paragraph 1.6.123 of the Explanatory Memorandum [APP-007] sets out the justification for modifications from the equivalent provisions in the model provisions.</p> <p>4) The Applicant considers that a 28-day notice period within this article of the draft DCO is appropriate. The Applicant recognises that landowners and occupiers will wish to have as much notice as possible where possession is being taken. This has to be balanced against the Applicant having sufficient powers to progress the Proposed Development in a timely manner. Including lengthier notice periods introduces a factor that can cause delay in the construction programme if the Applicant cannot gain access to land when it is required. The Applicant will endeavour to provide more advanced notice where possible but considers that 28-days is appropriate as a minimum. This notice period has been accepted in the equivalent article in other recent made DCOs, including Article 28 of the Hornsea Four Offshore Wind Farm Order and Article 31 of the Net Zero Teesside Order 2024.</p>
1.7.20	Applicant	<p><b>Article 32 Temporary possession</b></p> <p>The wording of this Article (see 32(1)(a)(ii)), appears to allow temporary possession of any land within the Order limits, regardless of whether or not it is listed within Schedule 6 of dDCO [AS-008]. Please can the Applicant justify why those wider powers (which also allow temporary possession of land not listed in that Schedule) are necessary and appropriate and explain what steps they have taken to alert all landowners, occupiers, etc. within the Order Limits to this possibility.</p>	<p>The main purpose of the powers to take temporary possession is to prevent the permanent acquisition of land which is only required temporarily during either construction or maintenance. Without this power, the Applicant would have to seek more permanent acquisition in order to have certainty that the works required can be carried out. Not including this power in the DCO would have the undesirable consequence of increasing the need for compulsory acquisition.</p> <p>All identified landowners and occupiers have been formally consulted on the proposal, notified of the acceptance of the application and invited to participate in the process. Site notices were erected in accordance with the regulations to notify any person not individually identified. The notices stated that powers of compulsory acquisition and temporary possession of land was being sought. The powers sought by the Applicant are set out within the Draft DCO [AS-040] and Statement of Reasons [APP-010].</p>
1.7.21	Applicant	<p><b>Article 32</b></p> <p>Please give clarity as to how the time limit in Article 32(3)(a) works in practice? In particular, how is it possible to establish “the date of completion of the part of the authorised development specified”?</p>	<p>Article 32(3)(a) relates to the areas of land specified in Schedule 6 of the draft DCO where the Applicant would intend to take temporary possession. Those areas of land relate to the areas that would be used as construction compounds, as working areas and as construction accesses. Those areas all facilitate the works to the pipeline route as a whole and are therefore likely to be required for the majority of the construction schedule for the Proposed Development. They are therefore not likely to be considered “complete” in terms of Article 32(3)(a) until the pipeline has been installed. More broadly, the Applicant considers that whether an aspect of the authorised</p>



ExA-Q1.7	Question to	Question	Applicant response
1.7.22	Applicant	<p><b>Article 44</b></p> <p>1) Can the Applicant explain why the planning, design and access statement [APP-129] is not a certified document under Article 44?</p> <p>2) The interpretation section at Article 2 is lengthened as a number of the documents in this Article do not appear elsewhere in the DCO. It is suggested that some of the definitions can be moved to this Article as has been the case in several other Articles.</p>	<p>development is considered “complete” will be fact specific based on the infrastructure that the temporary possession relates to.</p> <p>1) The documents that are included in Article 44 as those to be certified by the Secretary of State are those intended to have a formal role in the future control of the development. For example, the outline construction environment management plan is to be certified, as the final version of the CEMP to be submitted under requirement 5 must be “substantially in accordance with the outline construction environment management plan”.</p> <p>The Applicant does not consider the Planning, Design and Access Statement [APP-129] to have the same status as the other documents listed in Article 44. It is not intended to be a document that controls the future construction of the Proposed Development and is not referred to within the Draft DCO [AS-040]. The Applicant therefore does not consider it necessary for this to be certified under article 44.</p> <p>2) The Applicant has updated Article 2 of the draft DCO to remove the definitions for “crown land plans” and “special category land plans”, which are only referred to in Article 44.</p>
1.7.23	Applicant	<p><b>Correction Required</b></p> <p>The second and third paragraphs of the preamble to the dDCO [AS-008] refers to ‘[single appointed person]’. The Applicants are asked to make a change to refer to the panel in paragraphs 2 and 3.</p>	<p>The Applicant has made this correction to the version of the Draft DCO submitted at Deadline 1 (<b>document reference 2.1</b>, Revision C).</p>
1.7.24	Applicant Anglian Water	<p><b>Discrepancy in the dDCO</b></p> <p>In their representation [RR-009], Anglian Water Services appear to have identified a contradiction between Part 4 of the DCO (Articles 17 to 21) and the Outline Construction Environmental Management Plan (OCEMP) [APP-068]. The application documents state in relation to Anglian Water’s drainage network that foul drainage “<i>will be mitigated through the embedded mitigation whereby there will be an independently managed foul drainage system at the construction compounds with the foul water contained on site, regularly pumped, emptied, and transported off site.</i>”</p> <p>If this is the case, then the right to connect to the public sewer in the Part 4 of draft DCO Order would not be necessary. Is this indeed the case?</p>	<p>The Applicant does not anticipate needing to connect into the public sewer as part of the construction or operation of the proposed development. However, as the front-end engineering design has not been completed, the Applicant wishes to retain this power in the draft DCO in case a need to do so is identified. The Applicant considers that this power is standard for projects of this nature.</p> <p>If a need to connect into the public sewer was required, the Applicant would discuss this with Anglian Water and the local authority, with the mitigation measures in the final CEMP reflecting such a proposal.</p>
1.7.25	Applicant	<p><b>Parameters</b></p> <p>The ES refers to a series of parameters associated with temporary infrastructure such as compounds and lay down areas. However, whilst the dDCO refers to the works plans etc which contain these temporary infrastructure works, the specified parameters of temporary infrastructure do not appear to be specified or secured within the dDCO. The Applicant is requested to confirm why all listed parameters are not within the dDCO.</p>	<p>Requirement 4 of the Draft DCO [AS-040] includes specific parameters for the permanent infrastructure that would form part of the Proposed Development. The Applicant does not consider it necessary to include specified parameters for the temporary infrastructure, as this is considered to already be adequately controlled by the Works Plans [APP-014 and APP-015], which show the areas in which the construction compounds and lay down areas would be located. In each case, the area shown on the Works Plans as the location of the temporary infrastructure aligns with the description in ES Chapter 3: Description of the Proposed Development [APP-045]. Indicative layouts are included within Chapter 3. From a practical</p>



ExA-Q1.7	Question to	Question	Applicant response
			perspective, the three compounds are also constrained in size by either field boundaries, or other hard constraints such as roads or watercourses.
<b>Requirements</b>			
1.7.26	Applicant	<p><b>Requirement 4</b></p> <p>Requirement 4 in the dDCO [AS-008] states the height of perimeter fencing would be 3.2m. However, the Planning Design and Access Statement [APP-129, Paragraph 6.3.21] states security fencing of 2.4m in height will be erected. Explain the situation.</p>	The reference to 2.4m in the Planning Design and Access Statement is an error. This will be corrected in an updated version of the Planning Design and Access Statement submitted at a future deadline.
1.7.27	Applicant Natural England (NE) Environment Agency (EA) Historic England (HE)	<p><b>Requirement 5</b></p> <p>Are there other bodies, such as NE, EA and HE and/or local groups that should be consulted, along with those already identified? If so, please amend as necessary, if not please explain. Please clarify how long the parties would be given to review and comment on the documents?</p>	<p>The Applicant has updated the Draft DCO to include the Environment Agency as a named consultee under this requirement, as requested at paragraph 3.9 of their relevant representation [RR-034]. Revision C of the Draft DCO has been submitted at Deadline 1 (<b>document reference 2.1</b>). The Applicant agrees with the Environment Agency that the Draft Construction Environmental Management Plan (CEMP) includes matters within their statutory remit. Revision A of the Draft CEMP has been submitted at Deadline 1 (<b>document reference 6.4.3.1</b>).</p> <p>The Applicant does not consider it necessary to include any other parties as named consultees under this requirement.</p> <p>Historic England are already a named consultee in respect of requirement 10 (archaeology) which relates to approval of a written scheme for investigation of areas of archaeological interest. The Applicant considers this will provide Historic England with sufficient scope to comment on final mitigation measures relevant to their statutory remit.</p> <p>None of the commitments within the Draft CEMP seek approval or input from Natural England and the Applicant does not consider it necessary or appropriate to include them as a named consultee for the discharge of this requirement. Natural England will have an opportunity to comment on the Draft CEMP through the Examination.</p> <p>The Applicant does not consider it necessary or appropriate to include other local groups as a named consultee.</p>
1.7.28	Applicant	<p><b>Requirements 11 and 12</b></p> <p>Explain the interaction between Requirements 11 and 12 in the dDCO [AS-008] with particular emphasis on how, if survey work established protected/priority species were present, mitigation measures would be proposed and agreed with the relevant statutory bodies.</p>	<p>The Applicant has already undertaken a range of survey work, which is summarised in ES-Appendix 6-1: Phase 1 Habitat Survey Report [APP-077]. The purpose of requirement 12 is to ensure that the undertaker carries out further survey work as necessary to determine whether any European protected species (EPS) are within the order limits. That work will effectively update some of the surveys reported on within [APP-077]. If those surveys do identify any further constraints linked to the presence of EPS, then it may be that suitable mitigation is already provided through the Draft CEMP [APP-068]. Alternatively, the results may necessitate a need to amend/update any existing EPS licence applications. Where EPS are found for which licences are not already identified as being required, the appropriate licences will be applied for from the relevant regulator.</p> <p>Requirement 11 provides for the submission and discharge of a LEMP. Some aspects of the outline LEMP relate to pre-commencement survey work, but the matters covered by the LEMP will be broader than the surveys to be undertaken in connection with Requirement 12. The surveys undertaken in accordance with the outline LEMP will inform the implementation of mitigation relevant to ecology within the CEMP.</p>

ExA-Q1.7	Question to	Question	Applicant response
1.7.29	Applicant	<p><b>Requirement 13</b></p> <p>Requirement 13(4)(a) states that the construction hours for the Proposed Development could be exceeded in events required to mitigate delays to construction due to weather conditions.</p> <p>(1) Describe what weather conditions would cause construction to cease.</p> <p>(2) Why would it be necessary to allow effective 24hour working to 'catch-up' on the construction programme.</p> <p>(3) If works are allowed beyond programmed hours, have the effects of this been assessed in the ES or form part of the worst-case scenario that underpins the assessments (e.g., for noise)?</p> <p>(4) Commitment B16 [APP-068] states topsoil stripping would stop if there was an event with 15mm rainfall or more, with a subsequent drying period allowed before works resume. Would that classify as an 'extreme' event that would instigate later working hours?</p>	<p>The Applicant has amended requirement 13 of the Draft DCO (<b>document reference 2.1</b>). Any works outside of the stated hours to mitigate delay due to weather conditions would require the planning authority's approval before they could be undertaken.</p> <p>1) Rain would be the main weather impact on the construction programme, as land could become waterlogged and unworkable. The conditions in which works would cease are set out in the Outline Soil Management Plan [<b>APP-096</b>] at paragraph 4.2]. The construction programme would be scheduled from spring to autumn to minimise the risk of such events.</p> <p>2) The Applicant would not intend to have 24-hour working to 'catch-up' on the construction programme due to weather delays. The Applicant has amended the draft DCO as noted above.</p> <p>3) The potential for the operations specified in sub-paragraph 13(3) to be undertaken outside of the hours stated in requirement 13(1) have been assessed in the ES. For example, the potential for HDD to require a 24-hour working period is considered in paragraph 13.7.7 of ES Chapter 13: Noise and Vibration [<b>APP-055</b>] and the potential for hydrostatic pressure testing to take 24 hours is considered in paragraph 13.7.50. The Applicant notes that the Draft CEMP [<b>APP-068</b>] includes commitments seeking to avoid or minimise potential significant effects in respect of any nighttime working (for example, commitment references I20 and I23).</p> <p>To undertake any works other than those listed in sub-paragraph 13(3) outside of the stated working hours, the Applicant would require obtaining the planning authority's consent. The Applicant considers that this is suitable to ensure that no new or additional significant environmental effects would occur as a result of those works.</p> <p>4) A single event is very unlikely to result in a delay to the construction programme that prompted a request for extended working hours. This would be more likely to occur if there were multiple events, or an extended period of rainfall, beyond that expected in usual summer months.</p>
1.7.30	Applicant	<p><b>Requirement 16</b></p> <p>Requirement 16 of the dDCO [AS-008] relates to the decommissioning of the project, and the submission of an effective plan prior to planned cessation. However, under the DCO definition of maintain the term 'abandon' is used. Explain whether the Applicant would submit a decommissioning plan for any abandoned works and if not, why not?</p>	<p>As set out in response to WQ1.7.5, the decommissioning environmental management plan would include detail of the elements of the pipeline that would remain in situ. These are the aspects of the Proposed Development that 'abandonment' would be relevant to.</p>
1.7.31	Applicant	<p><b>Lighting</b></p> <p>The plans that accompany the application (e.g., the Washingdales Lane Block Valve Station Elevation Plan [APP-027]) shows the location of floodlighting. The dDCO [AS-008] references lighting in Schedules 1 and 9 but does not appear subject to specific controls (design, hours of use) in the Requirements. The ExA note 'details of</p>	<p>ES Chapter 3: Description of the Proposed Development [<b>APP-045</b>] sets out the lighting requirements for construction and operation in the following paragraphs:</p> <p><b>Operational lighting:</b></p> <ul style="list-style-type: none"> <li>3.6.25 – Immingham Facility operational lighting</li> </ul>

ExA-Q1.7	Question to	Question	Applicant response
		<p>lighting during construction' is listed under Requirement 5(2)(a), but not in any operational sense. Explain how lighting would be used, both during construction and operation, and any limitations to such use. Subsequently consider making amendments to the dDCO to allow such limitations to be adhered to.</p>	<ul style="list-style-type: none"> <li>• 3.8.7 – Block Valve Stations operational lighting</li> <li>• 3.10.22 &amp; 3.10.23 – Theddlethorpe Facility operational lighting</li> <li>• 3.14.27 – 3.14.33 – Operational lighting - general 3.12.90</li> </ul> <p><b>Construction lighting:</b></p> <ul style="list-style-type: none"> <li>• 3.12.94 – pipeline construction lighting</li> <li>• 3.13.122 – 3.12.228 – Immingham Facility, Theddlethorpe Facility and Block Valve Stations construction lighting</li> </ul> <p>The Applicant notes that the Draft CEMP includes a number of commitments relevant to control of lighting in the construction phase, including the following reference numbers: A18, B21, B27, D10.</p> <p>The Applicant has also included a commitment (ref Op13) in the Operational Phase Mitigation <b>[APP-073]</b> that any lighting will be designed to ensure there is reduced potential for impacts on neighbouring properties or habitats.</p> <p>The Applicant does not consider that any further requirements or controls relating to lighting are necessary.</p>
1.7.32	Applicant	<p><b>Aviation Lighting</b></p> <p>There is no mention in the ES or the dDCO about the need (or not) for aviation safety lighting to be attached to the 25m high vents (or the emergency 50m high vent). Is lighting proposed and, if so, where would this be secured in the dDCO and what are the visual effects of this on the various receiving environments?</p>	<p>There is no requirement for aviation lighting on the vent stacks proposed at the Immingham Facility or the Theddlethorpe Facility. Guidance from the Civil Aviation Authority is that such lighting only becomes legally mandated for structures of a height of 150 metres where not in the vicinity of an aerodrome.</p>
1.7.33	Applicant	<p><b>Marker posts</b></p> <p>The description of the Proposed Development states: <i>"The Applicant will ensure that marker posts are installed along the pipeline route for operations/maintenance reasons"</i> [APP-045, 3.5.10].</p> <p>There are no details in the dDCO as to the height, appearance, frequency or location of the marker posts. Provide these details, including if they are the same things as the 'CP Test' posts referred to [APP-045, Paragraph 3.7.23].</p> <p>Also, the ExA assumes these would be permanent features on the land along the length of the pipeline corridor. If that assumption is correct, why is land not being acquired permanently for such markers to be installed?</p>	<p>Marker posts and CP test posts serve a different purpose. A CP test post facilitates regular monitoring of the pipeline cathodic protection system. Marker posts alert maintenance personnel and/or third parties to the presence of a buried pipeline and provide the appropriate contact details. A CP test post is approximately 2ft. in height from the ground and typically white in colour to make them visible, whilst a marker post can be a similar size to a CP test post it may also serve as an aerial marker, where it may be taller and thinner (up to 2m) to ensure it is visible and provide a method of locating the pipeline route during fly overs. Markers and test posts will be periodically located along the pipeline route, typically at field boundaries, road crossings, where the pipeline changes direction and other regular intervals. These are generally placed at publicly accessible places, or in agreement with the landowner/occupier to warn parties of the pipeline's presence.</p> <p>The Applicant is intending to create rights over land that would allow the installation of marker and CP test posts. Table 3 in the <b>Statement of Reasons [APP-010]</b>, includes rights that would be sought over land relating to the installation and maintenance of the pipeline. This includes at point (f): a right to:</p> <p>"(f) install, keep, maintain, replace, renew and remove pipeline marker posts, test posts and aerial markers within that part of the land over which the new rights are acquired, to identify the location of the pipeline (subject to the undertaker seeking to locate the marker posts so as to minimise interference with the owner's future use and operations within the land)"</p>

ExA-Q1.7	Question to	Question	Applicant response
			<p>The Applicant considers that installing these posts in accordance with rights obtained to do so is more proportionate than acquiring ownership of the land, particularly given the small dimensions of the posts. The Applicant considers that this is standard practice for pipelines and cables.</p>
1.7.34	Applicant	<p><b>Discharging of requirements</b></p> <p>The EA [RR-034] have requested the dDCO be amended to allow requirement discharging authorities 20 business days (as opposed to 21 calendar days) for the discharging process to be undertaken within. Is the Applicant willing to make this change? Explain with reasons.</p>	<p>The Applicant has amended the Draft DCO (Revision C) at Deadline 1 (<b>document reference 2.1</b>) to extend the time period, as requested by the Environment Agency. The Applicant notes that it has extended the timescales throughout Part 2 of Schedule 2 of the Draft DCO, following discussion of these with the relevant local planning authorities held on 10 April 2024.</p>
1.7.35	Applicant	<p><b>Biodiversity Net Gain</b></p> <p>In paragraph 4.1.7 of the Bridging Document [APP-128], it is stated that the Applicant <i>“is committed to making a positive contribution to biodiversity net gain and is making a voluntary commitment.”</i> Please clarify the extent of this and where in the DCO it is confirmed?</p>	<p>The Applicant's approach to biodiversity net gain is set out in more detail in response to WQ1.8.12 below.</p> <p>Although delivery of BNG is not a legal or national policy requirement for NSIPs, the Applicant recognises the importance of BNG and is committed to delivering BNG that is proportionate to the nature of the Proposed Development. The Applicant's approach to delivery of BNG is set out in the Draft Biodiversity Net Gain Strategy [APP-126] and the Initial Biodiversity Net Gain Assessment [APP-125].</p> <p>In summary, the Applicant is making a voluntary commitment to deliver a 10% net gain in biodiversity relating to the permanent habitat losses at the Immingham Facility, Theddlethorpe Facility and Block Valve Stations. This is not a 10% gain in respect of the entire order limits, which is considered disproportionate. The majority of the pipeline crosses through arable land and will be fully reinstated to arable use once the pipeline is installed. Delivering 10% net gain on this temporary habitat loss is considered disproportionate and, as delivery of BNG is not currently mandatory for NSIPs, would need to be done through landowner agreement as it is not possible for the Applicant to take rights over land compulsorily for the purpose of delivering BNG.</p> <p>For the reasons set out in response to WQ1.8.12, the Applicant does not consider it necessary to include a requirement within the Draft DCO [AS-040].</p>
<b>Schedules</b>			
1.7.36	Applicant	<p><b>Schedule 1</b></p> <p>Work No.18 a is described as an improvement and use of an existing track as a temporary access.</p> <p>1) What works will be undertaken to this access track and how do they constitute an improvement?</p> <p>2) Once the use of the temporary access has ceased, will the improvements be left in situ to benefit the landowner?</p>	<p>Work No.18a was erroneously referred to in the draft DCO as an improvement of an existing track. This work would be for the creation of a new track and the Draft DCO (<b>document reference 2.1</b>) has been updated accordingly. The purpose of this new track is to provide a means of access that avoids impacting on trees within this section of the pipeline corridor.</p> <p>In general, where the Applicant has referred to “improvement” of an existing track, this work would involve provision of a new hard surfacing (i.e. a stone surface). The Applicant will discuss with landowners whether they would rather they would prefer that the land is re-instated, or the new/improved track left in situ. The Applicant will leave the track in situ for the benefit of the landowner where that is their preference.</p>
1.7.37	Applicant	<p><b>Schedules 3 to 6</b></p> <p>Provide evidence that schedules 3 to 6 of the dDCO [AS-008] have been adequately consulted upon with the relevant Local Authorities and that the content has been agreed.</p>	<p>The Applicant is continuing to engage with the relevant Local Authorities on all aspects of the draft DCO. The Applicant has submitted draft Statements of Common Ground with each relevant Local Authority at Deadline 1.</p>



ExA-Q1.7	Question to	Question	Applicant response
1.7.38	Statutory Undertakers	<p><b>Schedule 9 Protective Provisions</b></p> <p>The Applicant has provided Protective Provisions in Schedule 9 of the dDCO [AS-008]. If these provisions are not acceptable, please provide either your preferred wording for the Protective Provisions or mark-up revisions to the Applicant's proposed Protective Provisions. Set out your reasons for any changes, including what the consequences would be without your changes being incorporated.</p>	
1.7.39	Applicant Statutory Undertakers	<p><b>Schedule 9 Wording of Standard provisions</b></p> <p>Several service providers including Northern Powergrid (Yorkshire) Plc [RR-080]; NH [RR-072]; Anglian Water [RR-009] are concerned that their standard clauses have not been included in the Protective Provisions. Has there been consultation concerning the detailed provisions with the appropriate SU?</p>	<p>The Applicant is engaging with all statutory undertakers that have requested bespoke protective provisions be included within Schedule 9 of the draft DCO. As part of these ongoing negotiations, the Applicant has considered any preferred terms that an undertaker has provided. The Applicant will continue to engage with all statutory undertakers with a view to reaching an agreed position before the close of the Examination.</p>
1.7.40	Applicant Environment Agency	<p><b>Schedule 9 format</b></p> <p>In their representation [RR-034], the EA submit that the draft Protective Provisions included in Schedule 9, Part 7 are not in a format they agree with and until the wording of Protective Provisions is in a format acceptable then they will not agree to the disapplication of the Environmental Permitting (England and Wales) Regulations 2016 for flood risk activities. Provide an update concerning any further discussions.</p>	<p>The Environment Agency have advised the Applicant that they are currently updating their preferred form of protective provisions and will provide an updated copy of these as soon as possible. The Applicant will consider these once received.</p>
1.7.41	Applicant Marine Management Organisation	<p><b>Schedule 9 Scope of Provisions</b></p> <p>There are no Protective Provisions for the Marine Management Organisation as no draft Deemed Marine Licence has been submitted for the offshore elements of the Project. This is raised in other questions, but this would appear to be an important element if the Proposed Development is to become functional. Please comment on this apparent omission?</p>	<p>Within this application, the Applicant is not seeking consent to undertake any works in the marine environment i.e. beyond Mean High Water Springs. As such, the Applicant is not seeking authorisation to undertake any licensable marine activities that would require a licence under sections 65 and 66 of the Marine and Coastal Access Act 2009. Therefore, no deemed marine licence has been included within the development consent order.</p> <p>The Applicant notes that this is different to the Net Zero Teesside Project, which did include a deemed marine licence. The Applicant has set out within <b>Appendix A</b> (of this document) a comparison between this application and the Net Zero Teesside Application. A key difference is that the applicant in the NZT Project required to undertake works in the intertidal area, which required a marine licence. The applicant in the NZT Project sought that authorisation through a deemed marine licence being included in the DCO. The Viking CCS Pipeline <u>does not</u> require any works to be undertaken in the intertidal area. No works are required to the existing LOGGS Pipeline. Therefore, no deemed marine licence is included in the draft DCO <b>[AS-040]</b>.</p>
1.7.42	Applicant	<p><b>Schedule 10 Arbitration</b></p> <p>Schedule 10 of the dDCO [AS-008] sets out the terms for arbitration. Should it be written explicitly that the Secretary of State is not subject to arbitration processes?</p>	<p>The Applicant considers that this is already suitably addressed in Article 48(2) of the Draft DCO <b>[AS-040]</b>, which states:</p> <p><i>"For the avoidance of doubt, any matter for which the consent or approval of the Secretary of State is required under any provision of this Order is not subject to arbitration."</i></p>

ExA-Q1.7	Question to	Question	Applicant response
1.7.43	Applicant	<p><b>OCEMP Clarification</b></p> <p>Measure A20 [APP-068] is annotated as being post-construction but it relates to site offices and welfare facilities. Should this be a 'construction' phase aspect or is it intended for welfare facilities to be retained along the pipeline route during operation?</p>	<p>This is a typographical error and should be for the construction phase only. An updated version of the Draft CEMP has been submitted at Deadline 1 (<b>document reference 6.4.3.1</b>).</p>
1.7.44	Applicant	<p><b>OCEMP Clarification</b></p> <p>Measure B4 [APP-068] uses the term "<i>within the construction site.</i>" For clarity purposes, does that mean the working corridor for laying the pipeline within the Order Limits?</p>	<p>This relates to all necessary points of access required, some of which are directly onto the working corridor and others that are outside the working corridor but provide access to it. All access points covered by measure B4 are within the Order Limits.</p>
1.7.45	Applicant	<p><b>OCEMP Clarification</b></p> <p>Measures B8 and B9 [APP-068] refer to reinstatement but no timeframe is given. The ExA consider, to be effective, a timeframe or programme of reinstatement should be committed to.</p>	<p>Consideration will be given to a timeframe for reinstatement, and this will be included as a commitment in the next update to the Draft CEMP.</p>
1.7.46	Applicant	<p><b>OCEMP Clarification</b></p> <p>Measure E27 [APP-068] mentions bentonite, but there does not appear to be a mitigation strategy or plan for dealing with bentonite breakout. Specify whether this will be a commitment in the register of mitigations or a separate management plan to be provided.</p>	<p>The need for a Bentonite Breakout Management Plan will be added as a commitment E34 in the register of mitigation measures. The commitment will be worded as follows:</p> <p><i>"Prior to commencement of any horizontal directional drilling (HDD) work, a Bentonite Breakout Management Plan (BBMP) will be produced. All HDD work will be undertaken in accordance with the measures set out in the BBMP."</i></p> <p>An outline of the proposed contents of the management plan is provided in response to WQ1.10.30</p>
1.7.47	Applicant	<p><b>OCEMP Clarification</b></p> <p>It is noted that none of the 'F' measures in the OCEMP [APP-068] place a specific height limitation to spoil stockpile heights despite such being discussed in the Outline Soil Management Plan [APP-096]. Should this be included in the list?</p>	<p>Agreed – this will be included on the list of mitigation measures. The proposed measure will follow the wording used in the Outline Soil Management Plan i.e.</p> <p><i>"Generally, topsoil stockpiles will not exceed 3 m in height and subsoil stockpiles will not exceed 5 m in height. However, if the soil to be stockpiled is dry (below the plastic limit) formation of higher stockpiles may be permissible, if required, as the soil is likely to remain dry in the core of the stockpile for the entire storage period. However, the appropriateness of higher stockpiles will need to be established on a location-by-location basis."</i></p>
1.7.48	Applicant	<p><b>OCEMP Clarification</b></p> <p>Can the Applicant commit to avoiding undertaking HDD work, particularly in noise sensitive locations, at night, thus enhancing the terms of measure I20 [APP-068]?</p>	<p>The success of a horizontal directional drilling (HDD) is largely dependent on the pull back operation, when the product pipe is installed in the created borehole. For easier installation, a larger diameter hole is drilled than the pipe diameter with bentonite or other high-performance fluid used to maintain the stability of the borehole prior to and during the pull back operation. Additionally, as part of the drilling process, a small portion of the bentonite coats the borehole wall, effectively creating a seal and preventing artesian water flow into the borehole.</p> <p>A key requirement of the HDD process, especially once the borehole is completed, is the completion of the pull back operation at the earliest opportunity, such that the borehole is not left unsupported for an extended period and to maintain a suitable bentonite viscosity to "lubricate" the pipeline installation during pullback.</p> <p>Potential outcomes of delay, suspension or cessation of the pull back operation is collapse of the borehole, increased pull back forces from higher pipe/soil interaction with associated</p>

ExA-Q1.7	Question to	Question	Applicant response
			<p>deformation/induced stresses on pipeline and/or coating integrity or worst case an uncompleted pull back operations due to a jammed pipeline.</p> <p>For these reasons it is not possible to commit to avoiding HDD works at night.</p> <p>Although the Applicant is unable to commit to avoiding undertaking HDD work at night, there are other mitigation measures that can and will be used to mitigate any risks of significant noise effects on residential properties. These include the use of acoustic fencing as set out in measure I22, which states that:</p> <p>“Depending on the location, plant and timing of works, acoustic fencing will be installed around the HDD site boundary to screen receptors from noise emissions. This mitigation could provide up to 10 dB of attenuation when the fencing screens the sources from the receiver.”</p> <p>The Applicant confirms that this would typically allow work to be undertaken as close as 100m to a residential property.</p>
1.7.49	Applicant	<p><b>OCEMP Clarification</b></p> <p>A number of relevant representations on behalf of business and business premises have expressed concern that little has been done to research, examine or plan for the operational requirements of each existing business. It is noted that none of the 'L' measures relate to specific businesses or impacts on business premises [APP-068]. Are any such mitigations considered necessary and if not, why not?</p>	<p>Most businesses affected by the Proposed Development are farming businesses and planning for their operational requirements during construction is covered under the 'F' mitigation measures relating to Agriculture and Soils. Landowners/occupiers that are subject to the exercise of compulsory acquisition powers will be entitled to compensation in accordance with the Compensation Code, which could include for impacts on their business.</p> <p>The Applicant does not consider that any further specific mitigation measures are necessary.</p>
1.7.50	Applicant	<p><b>Decommissioning mitigation register</b></p> <p>The Applicant is requested to provide a justification of the current decommissioning mitigation register within the OCEMP [APP-068] only containing a single entry, as it is considered that the impacts of decommissioning may in some cases be broadly similar to construction, and therefore would be known at this stage.</p>	<p>The Draft CEMP [APP-068] Paragraph 7.1.8 confirms that a Decommissioning Environmental Management Plan (DEMP) will be prepared prior to decommissioning. It also confirms that this DEMP will be developed based on the legislation and best practice at the time, and that it will largely resemble the Draft CEMP. The reason for not including details of all proposed DEMP measures is that there would be a substantial amount of repetition, given that many measures would be the same as the CEMP. However, the updated Draft CEMP submitted at Deadline 1 (<b>document reference 6.4.3.1</b>) now includes an indication as to which measures would also likely apply to decommissioning.</p>
1.7.51	Applicant	<p><b>Approach to management plans</b></p> <p>With reference to table 2 of the OCEMP [APP-068], it is not clear why the Applicant has been able to provide some of the control documents in outline form to the examination but has been unable to provide others in outline form (those listed as “no” in Table 2). The ExA requests additional information on the approach to the examination of control documents.</p>	<p>The general approach of the Applicant has been to submit outline management plans, where the mitigation measures within those plans are relied on to mitigate potentially significant effects from the Proposed Development. That allows the proposed content of the plan to be scrutinised through the Examination. The Applicant has not submitted outlines of plans where the mitigation is not specifically required to address potentially significant effects. The detail of these plans would be submitted to the planning authority for approval post-consent. The Applicant considers that this is a standard approach for projects of this nature.</p> <p>The management plans that were not contained in outline in the DCO application are as follows:</p> <p><b>Stakeholder Communications Plan (SCP)</b></p> <p>This is identified as Measure A3 in the Draft CEMP [APP-068] and is also referenced in the ES Chapter 14: Air Quality [APP-056]. Although there is a commitment to prepare such a plan it is not required to address significant effects and it was therefore not considered necessary to develop an outline version of the plan at this stage.</p>

ExA-Q1.7	Question to	Question	Applicant response
			<p><b>Safety Health and Environment (SHE) Plan</b></p> <p>This is identified as measure A6 in the Draft CEMP [APP-068]. However it is not required to address any of the potential significant effects identified in the ES. For this reason it is not proposed to develop an outline version of this plan.</p> <p><b>Materials Management Plan (MMP)</b></p> <p>This is a mitigation measure set out in ES Chapter 9: Geology and Hydrogeology [APP-051] and ES Chapter 15: Climate Change [APP-057] as measure K4. Although mentioned in relation to potentially significant effects in the Geology and Hydrogeology chapter, it is not the materials management plan that is required to reduce the significance of effects to minor adverse. It is the Inspection and Discovery Strategy that will achieve this.</p> <p><b>Travel Plan</b></p> <p>This plan was identified as mitigation measure H3 in ES Chapter 12: Traffic and Transport [APP-054], however it was not required to address significant effects. Despite this an Outline Travel to Work Plan is in development, a copy of which will be provided to the Examining Authority.</p> <p><b>Construction Logistics Plan</b></p> <p>This plan was identified as mitigation measure H2 in ES Chapter 12: Traffic and Transport [APP-054] and ES Chapter 14: Air Quality [APP-056]. However, this plan is not required to address significant effects.</p> <p><b>Emergency Response Plan</b></p> <p>This plan was identified as mitigation measure G33 in ES Chapter 11: Water Environment [APP-053]. It is also identified as measure E4 in the Agriculture and Soils chapter and geology and hydrogeology chapter. However, it was not required to address potentially significant effects. As such it is not considered essential to develop further at this stage.</p> <p><b>Flood Warning and Evacuation Plan</b></p> <p>This is a construction stage plan which is identified as mitigation measure G1 in ES Chapter 11: Water Environment [APP-053]. It is also identified as a measure in ES Chapter 15: Climate Change [APP-057]. However, this plan is not required to address significant effects during construction and was therefore not considered to be essential to develop further at this stage.</p> <p><b>Energy Reduction Plan</b></p> <p>This is identified as mitigation measure K2 in ES Chapter 15: Climate Change [APP-057]. It is not required to address an otherwise significant effect and has not therefore been provided in outline at this stage.</p> <p><b>Sustainable Procurement Plan</b></p> <p>This is identified as mitigation measure K3 in ES Chapter 15: Climate Change [APP-057]. It is not required to address an otherwise significant effect and has not therefore been provided in outline at this stage.</p> <p><b>Construction Ecological Management Plan (CEcMP)</b></p> <p>This management plan was not required to mitigate any effects reported in the ES Chapter 6: Ecology and Biodiversity [APP-048]. As such it was considered unnecessary to develop an outline version of the plan at this stage.</p>



ExA-Q1.7	Question to	Question	Applicant response
			<p><b>Species Protection Plans (SPP) (or similar such as Precautionary Working Method Statement)</b></p> <p>Precautionary working methods will need to be developed to mitigate potentially significant effects on reptiles. As such an Outline Precautionary Working Method Statement for Reptiles will be developed and submitted to the Examining Authority at Deadline 2.</p> <p><b>Invasive Non-Native Species Method Statement (INNSMS)</b></p> <p>An Invasive species management plan is required to be developed under mitigation measure B1. An Outline version of this plan will be developed and provided to the Examining Authority at Deadline 2.</p> <p><b>Water Efficiency Management Plan</b></p> <p>This plan was identified as mitigation measure G31 in ES Chapter 11: Water Environment [APP-053], however it was not required to address significant effects. This plan is intended simply to improve the efficient use of water during construction. As such it is not considered essential to develop further at this stage.</p> <p>Some of the measures likely to be included in this plan are already set out in measure G18, These are:</p> <ul style="list-style-type: none"> <li>• Undertake water audits that identify all water-using processes, activities and equipment on Site (these will be updated periodically to reflect any significant changes in site activities through the Project life cycle);</li> <li>• Develop an action plan, including staff engagement and training for relevant staff, to reduce water consumption by all water-using processes, activities and equipment on site;</li> <li>• Undertake monitoring regime to assess the effectiveness of water conservation measures in the action plan; and</li> <li>• Establish a reporting regime to advise on the effectiveness of the action plan (which will be completed at a minimum of annually).</li> </ul> <p><b>Dust Management Plan</b></p> <p>This is required to address significant effects and is committed to as measure J2 in the CEMP [APP-068] and ES Chapter 14: Air Quality [APP-056]. However, the measures that can be defined at this stage are either already included in the CEMP as other 'J' measures, or else cannot be defined until a Contractor is appointed and detailed design completed.</p> <p><b>Unexploded Ordnance (UXO) assessment</b></p> <p>This assessment forms part of the FEED stage deliverables and is a standard form of assessment provided by third party providers. As such it is not considered necessary to develop further at this stage.</p> <p><b>Habitat Management Plan</b></p> <p>Any measures that would be required under this plan are already included within the Outline Landscape and Ecological Mitigation Plan [APP-127], and so a specific Habitat Management Plan is not considered necessary to develop at this stage.</p>
1.7.52	Applicant	<b>Security of controlling documents</b>	1) As confirmed in the response to WQ1.7.51, some of the management plans are required to address significant effects and these are typically the ones that have been developed in outline

ExA-Q1.7	Question to	Question	Applicant response
		<p>With reference to table 2 of the OCEMP [APP-068], it does not appear as though all documents are referred to in schedule 2, part 1, requirement (5)(2), and as such it is not clear how these are to be secured. The Applicant is requested to:</p> <p>1) Provide additional information as to why not all of the required control documents are listed in the dDCO, and where not listed, how these would be secured, as the phrase “substantially in accordance with” may result in the Applicant being able to remove these from the final Construction Environmental Management Plan (CEMP).</p> <p>2) Provide additional information as to how the mitigation register in table 3 is to be secured, as the phrase “<i>substantially in accordance with</i>” may result in the Applicant being able to remove these from the final CEMP.</p>	<p>(noting this excludes those that are proposed to be submitted to the ExA – see response to 1.7.51 above). If a plan were proposed to be removed from the final CEMP, this would be subject to the agreement of the various discharging authorities (Local Authorities in consultation with the Environment Agency). This would allow measures to be presented in the final CEMP in a different way to what is currently envisioned, where this may be considered more appropriate.</p> <p>2) The same principal applies to the measures set out in Table 3 of the CEMP. There is no risk of measures being unilaterally left out, as the Final CEMP requires agreement of the discharging authorities.</p> <p>This approach also allows a degree of flexibility to ensure different or new/novel mitigation techniques can be adopted in agreement with the discharging authorities, whilst ensuring the same, or an improved, level of mitigation is achieved.</p>

**Table 8: Q.1.8 Ecology and Biodiversity**

ExA-Q.1.8	Question to	Question	Applicant response
<b>Ecology</b>			
1.8.1	Applicant	<p><b>Chalk Stream Ecology</b></p> <p>ES Chapter 6 [APP-048], whilst referring to running water, makes only one reference to chalk streams, in mitigation measure G24. However, there does not appear consideration of the ecological value of these chalk streams or whether there are any particular species of importance/ uniqueness associated with them. Can the Applicant set out fully why this is the case.</p>	<p>The Applicant acknowledges the importance of chalk streams in the area and their unique ecological features. As such, the chalk streams in the area that are to be crossed by the Proposed Development are to be crossed by non-intrusive construction methods such as HDD or Auger-Bore and therefore the Proposed Development will have a negligible/no impact on the chalk streams in the area.</p>
1.8.2	Applicant	<p><b>Invertebrates</b></p> <p>ES Chapter 6 [APP-048, Paragraph 6.5.72] states that effects upon invertebrate communities are only considered likely where there are permanent losses of habitat. Set out why the temporary effects of construction with subsequent restoration have not been assessed with regards to the potential effects on invertebrate species.</p>	<p>The habitats within the order limits are likely to support a wide assemblage of common invertebrate species. Habitat loss within the order limits will be localised and habitats will be reinstated post development. The temporary loss of habitat was considered to be highly unlikely to have anything more than a negligible effect upon the invertebrate assemblage and was not therefore assessed. Most invertebrates are highly mobile, very short-lived and prolific breeders, and therefore population survival is well-adapted to short-term and temporary changes in habitat at a local scale particularly where the species are common and widespread and there are large areas of residual habitat available.</p>
1.8.3	Applicant	<p><b>Natterjack Toad and Common Lizard</b></p> <p>In respect of natterjack toad and common lizard at the Saltfleetby Dunes, has there been any assessment of the noise, vibration and disturbance effects arising from the works to the Dune Valve Station? If not, why not?</p>	<p>There is little evidence that natterjack toads or common lizards are susceptible to noise or vibration impacts. Moreover, paragraph 6.5.82 of ES Chapter 6: Ecology and Biodiversity [APP-048] confirms that the dune habitats at Theddlethorpe will remain unaffected by the development as they are to the east of the dune valve, which is the eastern most extent of intrusive construction work.</p> <p>Paragraph 3.11.6 (ES Chapter 3: Description of the Proposed Development [APP-045]) states that the Dune Isolation Valve will be replaced using the following steps:</p> <ul style="list-style-type: none"> <li>• The pipeline will be safely isolated either side of the valve;</li> <li>• The access hatches will be removed to allow access to the pit;</li> <li>• Actuator will likely be unbolted and removed to gain better access to the valve;</li> <li>• The current valve is welded into the pipeline so specialist cutting equipment will be utilised to remove the valve;</li> <li>• A crane will be used to support the valve and lift it out of position once separated; and</li> <li>• The new valve will be installed by reversing the above steps and then welding the new valve into position.</li> </ul> <p>These activities are minor and short term and are unlikely to generate significant noise or vibration. Coupled with the general absence of evidence that natterjack toad and common lizard are susceptible to either, the effects upon any reptiles or amphibians in the wider area will be negligible.</p>
1.8.4	Environment Agency	<p><b>Fish</b></p> <p>ES Chapter 6 [APP-048, Paragraph 6.5.92] states that no field surveys for fish have been carried out. Does the EA have any concerns in this regard?</p>	
1.8.5	Applicant	<p><b>Fish relocation</b></p> <p>The Outline Landscape and Ecological Management Plan (OLEMP) [APP-127, Paragraph 2.3.29] raises the possibility of relocating fish if</p>	<p>Fish would be relocated either upstream or downstream on the same watercourse, where construction methods necessitate a fish rescue, under a permit from the Environment Agency.</p>

ExA-Q.1.8	Question to	Question	Applicant response
		impacts upon them are unavoidable. Can the Applicant set out whether a receptor site, within or outside of, the Order Limits has been scoped for this purpose and secured by agreement with both a) the landowner and b) NE/ EA as necessary.	
1.8.6	Environment Agency Natural England	<p><b>Invasive Non-Native Species (INNS)</b> The Applicant has identified that invasive non-native species are present in the Order Limits [APP-048]. Mitigation measure B1 suggests a management plan will be prepared to ensure such species do not spread.</p> <p>1) Is it considered, given the species identified, that any specific measures need to be taken and/or committed to now?</p> <p>2) Should the project adopt a more proactive policy of seeking to remove such species where encountered along the pipeline-laying route?</p> <p>3) Would micro-siting around such INNS be an appropriate technique with assured biosecurity?</p>	
1.8.7	Applicant	<p><b>Woodland</b> ES Chapter 6 [APP-048, Table 6-12] states that the final pipeline route will aim to avoid areas of woodland and trees within the DCO Site Boundary but there remains potential for small areas of woodland habitat to be directly lost.</p> <p>1) In the register of mitigations, there does not appear a commitment to limit woodland loss as far as is practicable. The ExA considers this should be an aim of the route selection process and suggests such a commitment should be included. If not, why not?</p> <p>2) If woodland habitat were to be directly lost, would the Applicant seek one for one replacement via the OLEMP for that phase of the project? If not, why not? If so, where is this secured in the management plans or the dDCO?</p> <p>3) The OLEMP [APP-127, Paragraph 2.2.3] suggests that all hedges and trees removed will be reinstated, at least to a similar style and quality to those removed. Does this mean that the Applicant will initiate a replacement/ reinstatement ratio of 1:1 or greater in order to achieve net gain?</p>	<p>1)The routing of the pipeline has considered the location of trees and sought to avoid them wherever possible. Further information is included within the Arboricultural Report [APP-086]. A commitment has been added to Revision A of the register of mitigations in the Draft CEMP [previous reference APP-068], stating 'Loss of woodland will be avoided as far as is practicable'. Where trees and woodland will be retained, they will be protected in accordance with British Standard 5837 (2012) Trees in Relation to Design, Demolition and Construction. The updated version of the Draft CEMP has been submitted at Deadline 1 (<b>document reference 6.4.3.1</b>).</p> <p>2) The Applicant would seek a 2 for 1 replacement to ensure a net benefit in tree numbers.</p> <p>3) Should there be any loss of woodland, reinstatement will seek opportunities to improve the baseline condition where possible. This would be through replacement planting; but may also be achieved by enhancing the woodland through the species diversity (using native species of local provenance) or improving the structure of retained woodland. Detailed habitat creation and management measures will be provided in the Final LEMP.</p> <p>Many of the hedgerows that would be impacted the Scheme are species poor. Hedgerows will be reinstated using a mix of native species as detailed within Table 2 within the Outline LEMP [APP-127]. Hedgerow condition will be enhanced through additional planting to increase species diversity and infilling of gaps (if present) in order to achieve biodiversity gains. Detailed habitat creation and management measures for hedgerows will be provided in the Final LEMP.</p>
1.8.8	Applicant	<p><b>Restoration</b> ES Chapter 6 [APP-048] refers in some places to restoration or reinstatement of habitats lost temporarily during construction. There does not appear to be any assessment of how long it would take to undertake the restoration, how long it would take for the restored land to reach a condition whereby it would operate as a suitable or equivalent level of habitat as to what was lost nor any assessment of how that may impact the dependent species. Explain the circumstances of each.</p>	<p>For those habitats impacted by the permanent works (and assessed by the BNG assessment) the Metric 4.0 includes a temporal risk multiplier which represents the time required to create or enhance habitats. These standard numbers for time to condition have been used to determine those habitats which are proposed to be created / enhanced (taking into account any delays in creation). A summary of the timescales required to meet target conditions is provided in the BNG Assessment [APP-125]. Some examples are provided here for information: Modified Grassland to Poor Condition 1-year, Other Neutral Grassland to Moderate Condition - 5 years, Broadleaved Woodland to Moderate Condition - 15 years. The potential effects of habitat loss upon species have been considered within the relevant species sections of the ES.</p>



ExA-Q.1.8	Question to	Question	Applicant response
1.8.9	Natural England All Local Authorities	<p><b>Cumulative Effects</b> State whether or not the Applicant's approach to scoping and identifying likely cumulative effects, and the subsequent conclusions drawn within ES Chapter 6 is acceptable and inclusive [APP-048, section 6.11]?</p>	
1.8.10	Applicant	<p><b>Extent of protection for trees and hedges</b> In the OLEMP [APP-127, Paragraph 2.3.25] it makes some stipulations regarding tree works to retained trees. In the OCEMP [APP-068, Measure O1] it states no veteran trees will be removed. How do both of these restrictions interact with the overarching powers that would be allowed under Articles 39 and 40 in the dDCO? Do such measures need to be explicit on the face of the dDCO?</p>	<p>The OLEMP [APP-127] and Draft CEMP (Revision A submitted at Deadline 1 (<b>document reference 6.4.3.1</b>)) (and subsequent revisions), will form the basis of the final CEMP and OLEMP. The measures included in the final CEMP will need the agreement of the discharging authorities. If the wording of the measures cited in Paragraph 2.3.25 of the OLEMP or measure O1 of the Draft CEMP were changed or omitted this would require the agreement of the discharging authorities. As such the powers allowed under Articles 39 and 40 would be subject to the limitations agreed in the final CEMP.</p> <p>Where the Applicant has identified veteran trees a commitment has been made to retain them. These are identified within ES Volume IV Appendix 6-9 Arboricultural Report [APP-086].</p>
1.8.11	Applicant	<p><b>OLEMP uncertainty</b> There are occasions in the OLEMP where the language used gives room for interpretation (for example, the words "<i>as relevant and appropriate</i>" in [APP-127, Paragraph 2.3.21] or the words "<i>where feasible</i>" in [APP-127, Paragraphs 2.3.27]).</p> <ol style="list-style-type: none"> <li>1) Can the Applicant provide more certain language in these instances and if not, why not?</li> <li>2) If the Applicant insists on retaining the wording as written, the Applicant to explain who ultimately makes that judgement call as to whether something is appropriate or feasible, and would that person seek advice from any other party before carrying out any action?</li> </ol>	<p>This approach is standard and would ultimately be subject to enforcement by the local planning authority if commitments were not adequately followed. However, the Applicant will review the OLEMP to consider areas where the language can be made more certain. An updated version of the OLEMP will be submitted to the ExA at Deadline 2.</p>
1.8.12	Applicant	<p><b>Biodiversity Net Gain (BNG)</b> NE [RR-073] have recommended 10% BNG across all biodiversity types should be provided, being secured by a suitably worded requirement in the dDCO. The Applicant to provide wording for such a requirement and specify:</p> <ol style="list-style-type: none"> <li>1) if it is happy to commit to this;</li> <li>2) if the requirement is submitted on a without prejudice basis; or</li> <li>3) the reasons why a requirement is not necessary in its opinion.</li> </ol>	<p>1), 2) and 3)</p> <p>The Applicant does not agree with Natural England's recommendation that a requirement should be included in the draft DCO that requires 10% BNG across all biodiversity types.</p> <p>There is no legal requirement for the Proposed Development to provide BNG as part of the development. The provisions within the Environment Act 2021 that would make BNG mandatory for NSIPs is not yet in force and is not expected to apply to applications until at least those submitted after November 2025.</p> <p>Although delivery of BNG is not a legal or national policy requirement for NSIPs, the Applicant recognises the importance of BNG and is committed to delivering BNG that is proportionate to the Proposed Development. The Applicant's approach to delivery of BNG is set out in the Draft Biodiversity Net Gain Strategy [APP-126] and the Initial Biodiversity Net Gain Assessment [APP-125].</p> <p>In summary, the Applicant is making a voluntary commitment to deliver a 10% net gain in biodiversity relating to the permanent habitat losses at the Immingham Facility, Theddlethorpe Facility and Block Valve Stations. This is not a 10% gain in respect of the entire order limits, which is considered disproportionate. The vast majority of the pipeline crosses through arable land and will be fully reinstated to arable use once the pipeline is installed. Delivering 10% net gain on this temporary habitat loss is considered disproportionate and, as delivery of BNG is not currently mandatory for NSIPs, would need to be done through landowner agreement as it is not</p>

ExA-Q.1.8	Question to	Question	Applicant response
			<p>possible for the Applicant to take rights over land compulsorily for the purpose of delivering BNG.</p> <p>The Applicant considers that a requirement in the form suggested by Natural England would be unnecessary and unreasonable, and therefore would not meet the policy tests for a when a requirement should be included within a DCO (see paragraph 4.1.7 EN-1 (2011) and paragraph 4.1.16 of EN-1 (2023).</p> <p>As requested by the Examining Authority, the Applicant has provided a draft requirement <u>on a 'without prejudice' basis</u>. This requirement has been drafted to align with the Applicant's proposed approach to BNG outlined above.</p> <p><b>Biodiversity Net Gain</b></p> <p><i>14.—(1) No development may commence until a scheme securing the provision of biodiversity net gain of 10% or greater for habitats affected by the construction of AGIs or BVSS forming part of the authorised development (as calculated using Natural England Biodiversity Metric 4.0, or such other biodiversity metric approved by the relevant planning authority in consultation with the relevant statutory nature consultation body), has been submitted to and approved in writing by the relevant planning authority.</i></p> <p><i>(2) Where such a scheme is approved under this requirement, the works set out in that scheme must be carried out in accordance with the approved scheme.</i></p>
1.8.13	Applicant	<p><b>Mitigation Measures</b></p> <p>Implementation of controls in European Protected Species licences in relation to otters, water voles and great crested newts are referred to in ES Chapter 6 [APP-048]. The OCEMP refers to an EPS licence that will exclude water vole from the area if present and, if an otter holt is identified, this would be covered by license (G9). The ExA is required to ensure a level of certainty that these licenses will pass the derogation tests i.e. that the potential effects can be mitigated.</p> <p>Can the Applicant provide an update on the intended use of these licences, including ensuring that the use as a mitigation measure to avoid impacts to one species or habitat does not unintentionally cause impacts to others. If this has already been considered, the Applicant should cite where this information is presented in the ES and / or HRA.</p>	<p>Otter and water vole surveys were completed to inform the EclA and the results are presented in ES Volume IV Appendix 6-3: Otter and Water Vole Survey Report [APP-079].</p> <p>As the Proposed Development is a large linear scheme, update surveys to inform any necessary licence applications will be completed once the pipeline route within the Order Limits is fixed. As construction work will commence in 2026, update surveys will be undertaken 2025.</p> <p>Where possible, impacts upon protected species will be avoided by micro-siting the pipeline within the Order Limits to avoid resting places (water vole burrows, otter holts or badger setts). At the time of writing, no otter holts were identified within the Order Limits and there are no overlaps between locations of badger setts or water vole burrows. Therefore, it is considered unlikely that any mitigation measures would affect species other than the target species.</p> <p>However, in general such licences are likely to involve the translocation of species from areas that would be cleared for the development and thus the translocation process would not unintentionally cause impacts to other species. Any translocated animals would then be released into specifically created habitat where appropriate. Where they were to be released into existing habitat pre-release surveys would be undertaken to ensure that their release did not have negative effects on species in that habitat. This is not specifically presented in the ES as it is a standard protected species licence procedural matter, rather than a specific impact requiring assessment in the Environmental Statement.</p>

**Table 9: Q.1.9 Environmental Impact Assessment**

ExA-Q.1.9	Question to	Question	Applicant response
<b>Areas for further evidence</b>			
1.9.1	Applicant	<p><b>Donna Nook</b></p> <p>The Defence Infrastructure Organisation [RR-029] have highlighted the proximity of the Proposed Development to the Donna Nook Air Weapon Range. Set out clearly the Applicant's position into the likely environmental effects upon this installation and what, if any, specific mitigation is required to ensure the compatibility of the Proposed Development with the existing use.</p>	<p>The Applicant has contacted the Defence Infrastructure Organisation and is awaiting a response. It is assumed that the key safeguarding risks relate to increased risk of bird strike (often through wetland habitat creation) and the introduction of tall infrastructure in the low flying zone. No aspect of the proposals will attract birds and increase bird strike risk. The tallest element of the proposed development in the vicinity of the coast is the proposed vent stack at the Theddlethorpe Facility, however this structure will be no higher than the structures that were present on the former Theddlethorpe Gas Terminal. The Applicant therefore does not expect any significant environmental effects to occur to the range during any of the phases of the Proposed Development. The Applicant is happy to provide further details on the Proposed Development's final construction programme direct to the Defence Infrastructure Organisation, prior to any on site works occurring to ensure they are notified of works being undertaken.</p>
1.9.2	Applicant	<p><b>Venting</b></p> <p>The ExA are concerned that venting, vent noise, vent emissions, timings and notifications are not detailed with sufficient coverage in the operational phase mitigation [APP-073]. There is no mention of climatic conditions that may have an effect on when venting can be done to avoid damage to human health or the natural environment. Also, despite what is suggested in ES Chapter 3 [APP-045], there is no detail as to the circumstances whereby a 50m venting stack is considered necessary or what such a stack would mitigate and no detail regarding potential additional effects (i.e.; the intra-project effect with landscape and visual impact issues) is within the ES. There is no mention of venting at the block valve stations either. Fully describe how operational venting would work during a 1 year (yr), 5yr and 25yr period and the need, if any, for mitigations arising from this operation.</p>	<p>Please see the response to WQ1.2.1.</p> <p>As discussed in 1.2.1, venting requirements will be confirmed as part of the detailed design process. The Applicant will provide a technical note with an estimate of venting requirements at all locations, including venting noise, vent emissions, timings and notifications.</p> <p>Any venting that does take place will comply with any prevailing legislation and associated guidance in place at that time (e.g. the Control of Substances Hazardous to Health Regulations 2002 relating to exposure of employees to hazardous substances, such as CO<sub>2</sub>).</p> <p>Compliance is secured through requirement 15 of the draft DCO. Through compliance with relevant legislation, associated guidance and operational mitigation measures, any potential adverse effects on human and ecological receptors would be avoided.</p>
1.9.3	Natural England All Interested Parties	<p><b>Methodology</b></p> <p>Are NE (and others) content that the Applicant has used an appropriate methodology and guidance to inform the assessments and calculation of effects' significance in ES Chapter 6 [APP-048, Paragraph 6.4.9]?</p>	
1.9.4	Applicant	<p><b>Capacity of Proposed Development</b></p> <p>The ExA consider that the description of the capacity of the Proposed Development is presented inconsistently. Paragraph 3.1.9 states that the Proposed Development alone would be capable of delivering 10 million tonnes per annum by 2030 and 15 million tonnes per year by 2035. Paragraph 3.7.14 states that the pipeline would be capable of 17 million tonnes per annum. The Applicant is requested to provide further detail on the anticipated capacity of the Proposed Development on an annual basis from opening year, as it is noted in paragraph 3.7.14 that the flow rate is required to be gradually increased.</p>	<p>As stated within ES Chapter 3: Description of the Proposed Development [APP-045], it is expected that there will be a throughput of up to 10 million tonnes of CO<sub>2</sub> through the pipeline by 2030 and up to 15 million tonnes by 2035. However, the overall maximum design capacity of the 24" pipeline is 17 million tonnes per annum.</p> <p>Emitters will be sequenced to the Proposed Development by the UK Government through the currently ongoing Track 2 process. This process will determine both the initial volumes and the ramp up profile for the pipeline.</p>

ExA-Q.1.9	Question to	Question	Applicant response								
1.9.5	Applicant	<p><b>Winter construction works</b></p> <p>Paragraph 3.12.32 – 3.12.34 [APP-045] refer to the potential for the cessation of works between October and the following spring. The ExA considers that this is an extended period of time and therefore has the potential to lengthen the duration of any temporary effects considered within the ES in relation to construction. Can the Applicant please confirm the worst-case duration of construction works that has formed the basis of the assessment and confirmation that this takes into account the cessation of works during winter periods, and if not whether this would affect the assessment outcomes presented within the ES?</p>	<p>During any winter cessation, activities on site would be extremely limited and the site would be regularly inspected and maintained. As such there are several topics for which there would not be an increased duration of impact, but rather a cessation of the impact for the winter period, with a restart in the following spring, with the overall duration of effect lasting the same amount of time.</p> <p>The relevance of the winter cessation period to the various ES topics is provided below.</p> <table border="1"> <thead> <tr> <th>Topic</th> <th>Change in temporal magnitude of effects</th> </tr> </thead> <tbody> <tr> <td>Ecology and Biodiversity</td> <td>Cessation over the winter would not lead to new or different significant effects above those reported in the ES.</td> </tr> <tr> <td>Landscape and Visual</td> <td> <p>There would be no plant on site during the period of cessation, removing one of the main impacts on visual amenity. However, a reduced magnitude of effects on landscape character and visual amenity would remain due to the presence of the stripped easement and storage bunds and compounds. This would potentially extend the duration of the temporary effects for both landscape and visual receptors.</p> <p>The Applicant does not consider that the extended duration of the temporary effect would alter the significance of landscape and visual effects as assessed, such that they move into a higher category of increased magnitude or significance.</p> </td> </tr> <tr> <td>Historic Environment</td> <td> <p>In relation to temporary impacts on the settings of heritage assets, the assessment is based on use of relatively small-scale mobile plant for pipeline construction over a duration of up to 7 months in any part of the route.</p> <p>There would be no plant on site during the period of cessation. A reduced impact on setting would persist due to the presence of the stripped easement and storage bunds and compounds. Within the settings of affected heritage assets This would potentially extend the duration of the temporary effects on setting of the following assets:</p> </td> </tr> </tbody> </table>	Topic	Change in temporal magnitude of effects	Ecology and Biodiversity	Cessation over the winter would not lead to new or different significant effects above those reported in the ES.	Landscape and Visual	<p>There would be no plant on site during the period of cessation, removing one of the main impacts on visual amenity. However, a reduced magnitude of effects on landscape character and visual amenity would remain due to the presence of the stripped easement and storage bunds and compounds. This would potentially extend the duration of the temporary effects for both landscape and visual receptors.</p> <p>The Applicant does not consider that the extended duration of the temporary effect would alter the significance of landscape and visual effects as assessed, such that they move into a higher category of increased magnitude or significance.</p>	Historic Environment	<p>In relation to temporary impacts on the settings of heritage assets, the assessment is based on use of relatively small-scale mobile plant for pipeline construction over a duration of up to 7 months in any part of the route.</p> <p>There would be no plant on site during the period of cessation. A reduced impact on setting would persist due to the presence of the stripped easement and storage bunds and compounds. Within the settings of affected heritage assets This would potentially extend the duration of the temporary effects on setting of the following assets:</p>
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Ecology and Biodiversity	Cessation over the winter would not lead to new or different significant effects above those reported in the ES.										
Landscape and Visual	<p>There would be no plant on site during the period of cessation, removing one of the main impacts on visual amenity. However, a reduced magnitude of effects on landscape character and visual amenity would remain due to the presence of the stripped easement and storage bunds and compounds. This would potentially extend the duration of the temporary effects for both landscape and visual receptors.</p> <p>The Applicant does not consider that the extended duration of the temporary effect would alter the significance of landscape and visual effects as assessed, such that they move into a higher category of increased magnitude or significance.</p>										
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ExA-Q.1.9	Question to	Question	Applicant response	
				<p><i>Civil War Earthwork [303]</i> - minor adverse effect of temporary duration [not significant];</p> <p><i>Manor House [270]</i>, and <i>Ashleigh Farm [580]</i> - both moderate adverse effect of temporary duration [significant]</p> <p>The Applicant does not consider that the extended duration of the temporary effect on the setting of these heritage assets would alter the significance of effect as assessed <b>[APP-050]</b>.</p>
			Geology and Hydrogeology	Cessation over the winter would not lead to new or different significant effects above those reported in the ES.
			Agriculture and Soils	Cessation over the winter would not lead to new or different significant effects above those reported in the ES. The reason works would be stopped is to prevent damage to soils in wetter winter conditions.
			Water Environment	Cessation over the winter would not lead to new or different significant effects above those reported in the ES. The reason works would be stopped is to ensure no activities are undertaken during wetter winter conditions.
			Traffic and Transport	There would be no change as the assessment assumes the peak week of traffic endures for the entire construction period.
			Noise	Cessation over the winter would not lead to new or different significant effects above those reported in the ES.
			Air Quality	Cessation over the winter would not lead to new or different significant effects above those reported in the ES.
			Climate	Cessation over the winter would not lead to new or different significant effects above those reported in the ES.

ExA-Q.1.9	Question to	Question	Applicant response	
			Socio-Economics.	Cessation over the winter would not lead to new or different significant effects above those reported in the ES.
			Health and Wellbeing	Cessation over the winter would not lead to new or different significant effects above those reported in the ES.
			Materials and Waste	Cessation over the winter would not lead to new or different significant effects above those reported in the ES.
			Major Accidents and Disasters.	Cessation over the winter would not lead to new or different significant effects above those reported in the ES.
1.9.6	Applicant	<p><b>Cumulative effects with wider Viking Project</b></p> <p>It would appear from the bridging document that the assessment of cumulative effects with the wider Viking CCS project will predominately be undertaken as part of the offshore EIA, however this is not stated. The Applicant is requested to provide additional information on how the interaction (for example interaction of construction programmes and activities, and physical interactions between project components) between the onshore and offshore elements has been undertaken, as limited information in provided the ES [APP-062].</p>	<p>A key factor in the assessment of potential intra project cumulative effects between the Proposed Development and the offshore element of the Viking CCS Project is that the nearest element of offshore construction would be approximately 118 km seaward of the Proposed Development. This distance means there is extremely limited potential for physical interactions between the two elements of the project, even assuming if works were to occur at the same time. Information on the cumulative interaction between the Proposed Development and the offshore parts of the overall Viking CCS Project have been presented within the Bridging Document [APP-128].</p> <p>The distance of 118 km means there is also very limited potential for any shared receptors. The Offshore receptors are almost solely marine based and the Onshore EIA has no marine receptors.</p> <p>There is no potential that bird species/populations impacted by the onshore scheme could also be impacted by works 118 km offshore.</p> <p>The only possible shared receptor would be climate and the GHG emissions generated by the construction of the offshore element. There is currently insufficient detail about the offshore element for this to be considered in the bridging document, however consideration will be given to this intra-project effect within the offshore EIA.</p>	
1.9.7	Applicant	<p><b>Zones of influence and long list</b></p> <p>Table 20-8 [APP-062] details the study areas / zones of influence of the various technical chapters of the ES. However, the development search area given for Town and Country Planning Act (TCPA) schemes is 4km which is less than at least five of the topics (Ecology, traffic and transport, socioeconomics, health and wellbeing and materials and waste). Limited justification is provided as to why a 4km distance has been chosen for TCPA schemes. The Applicant is requested to provide additional information on this matter.</p>	<p>The Zones of Influence included in Table 20-8 ES Chapter 20: Cumulative Effects Assessment [APP-062] were developed in the early stages of the EIA, when it was considered disproportionate to undertake a search for other TCPA developments over such a large area until it was understood if the Proposed Development was actually likely to have effects over these distances. For this reason, the search for other TCPA developments was initially limited to 4km with the intention of expanding the search if effects associated specifically with the Proposed Development were identified over a greater distance.</p> <p>Each of the five topics with a Zone of Influence larger than 4km are discussed below:</p> <ul style="list-style-type: none"> <li>Ecology – the larger zone of influence related only to potential effects on Special Areas of Conservation, Special Protection Areas and Ramsar sites. As no impacts on sites at this</li> </ul>	

ExA-Q.1.9	Question to	Question	Applicant response
			<p>distance were identified it was not necessary to increase the search area for TCPA application in relation to ecology. Other ecological receptors were limited to within 250m of the Order Limits.</p> <ul style="list-style-type: none"> <li>• Traffic and Transport – most operational cumulative effects of TCPA applications are factored into TEMPRO traffic growth predictions. The assessment therefore included this growth in the baseline and as such the potential for cumulative effects was already accounted for.</li> <li>• Socio-economics – The economic study area is a 60-minute drive from the Proposed Development and the Applicant considers that it would be disproportionate to source information for an area of this size. The study area for all other receptors is a maximum of 1km either side of the Proposed Development and the 4km search area is therefore considered to be sufficient.</li> <li>• Health and Wellbeing – this topic draws its findings from other chapters.</li> <li>• Waste and materials – the narrative in the table states that “The Zol comprises the DCO Site Boundary and the region within which waste management facilities are located and from where construction materials may be sourced (East Midlands and Yorkshire and the Humber)”. The Applicant considers it would be disproportionate to source information for all proposed developments in such a large Zol and the 4km search area is considered to be sufficient.</li> </ul> <p>Consultation was undertaken with each of the Local Planning Authorities (LPA’s) including North Lincolnshire Council, North East Lincolnshire Council, East Lindsey District Council, West Lindsey District Council, and Lincolnshire County Council, giving them the opportunity to review and comment on the proposed list of cumulative schemes proposed to be included in the cumulative effects assessment.</p>
<b>Matters of clarification</b>			
1.9.8	Applicant	<p><b>Clarity on consultation</b></p> <p>It is not clear from either the introductions to each technical chapter of the ES, or from the information contained in ES Chapter 4 [APP-046] and ES Chapter 5 [APP-047], whether statutory consultees agreed with the study areas or scope of assessment in each technical topic. Provide evidence that the stat consultees were approached about the methodology for the EIA, and subsequently endorsed the method of the Applicant for each ES chapter.</p>	<p>Statutory consultees were provided with opportunities to comment and agree the scope of the ES, the assessment methodology and the identified study areas used as part of the assessment during several stages of the pre-examination stage of the DCO.</p> <p>The initial stage related to the EIA Scoping Report which was submitted in March 2022. Comments were received by the Applicant on 5 May 2022, and these were used to help inform the development of the ES and the EIA process as the Proposed Development progressed.</p> <p>A further opportunity for feedback and comment by statutory consultees relating to the approach to the EIA and the content of the ES was provided for during the preparation of the Preliminary Environmental Information Report. This was issued in November 2022 as part of the Statutory Consultation and feedback was received from all key statutory consultees in January 2023. This feedback was again used to inform the EIA and the preparation of the ES which was submitted in support of the application in November 2023.</p> <p>Each technical chapter of the ES [APP-048 to APP-061] includes a section entitled “<i>Scope of Assessment and Consultation</i>” which sets out the comments received with the Scoping Opinion and during the statutory consultation in response to the PEIR, and details how these comments have been addressed within the ES.</p> <p>Finally, throughout the EIA process, regular meetings were held with statutory consultees. These meetings included (but not limited to) the LPA’s, Environment Agency, Natural England, Historic England, National Highways, Lindsey Marsh Drainage Board and North East Lindsey</p>

ExA-Q.1.9	Question to	Question	Applicant response												
			Drainage Board. These meetings, amongst other things, covered proposed baseline studies, scope and methodology of the assessment, study areas and discussions on initial findings.												
1.9.9	Applicant	<p><b>Front-End Engineering Design</b></p> <p>Paragraph 2.1.6 of ES Chapter 2 [APP-044] suggests “Further design development will be undertaken once the Proposed Development moves into the Front-End Engineering Design (FEED) stage, which is due to commence in 2023.” Can the Examination be given an update as to what further front-end engineering design has been undertaken and how that has informed the DCO application submission and the ES assessments.</p>	<p>A significant amount of pre-FEED engineering was carried out to inform the DCO application and ES. Importantly, the ES assessments were all undertaken on a worst-case basis, including worst case parameters.</p> <p>On 31 January 2024, (post DCO submission for Examination) the Applicant announced that the FEED contract for the Viking CCS pipeline was awarded to Technip Energies. The contract includes responsibility for the design of the CO<sub>2</sub> transportation system and is another important milestone for the project as it progresses its design, costs and schedule towards a final investment decision (FID).</p> <p>The FEED design is working within the parameters included in the draft DCO and Works Plans, which were assessed in the ES.</p>												
1.9.10	Applicant	<p><b>Worst-case scenario</b></p> <p>At the Immingham end, there were two options for leaving the IAGI depending on Phillips 66 discussions prior to the change request. At the Theddlethorpe end, there are two options for the TAGI location. For each ES chapter topic, set out which of the options represents the worst-case scenario and demonstrate that the ES presents this information. A concise table may be a suitable presentation method.</p>	<p><b>Optionality - Theddlethorpe</b></p> <p>Each chapter included, where relevant, an assessment of the different impacts likely to result under each option. In assessing each option, a reasonable worst case was assessed. The layout and size of the facility assessed was the same at both locations; however, Option 2 assessment included 10m for screen planting.</p> <p>The following provides a summary for each topic, indicating whether the different locations made any substantial difference to the assessment findings.</p> <table border="1"> <thead> <tr> <th>Topic</th> <th>Consideration of Alternatives</th> </tr> </thead> <tbody> <tr> <td>Ecology and Biodiversity</td> <td>                     Option 1: assessment assumes no significant habitat loss as existing site is bare ground.                      Option 2: assessment included potential for permanent arable land habitat loss under the facility.                 </td> </tr> <tr> <td>Landscape and Visual</td> <td>                     Option 1: fully assessed including having its own viewpoints.                      Option 2: fully assessed including having its own viewpoints and also screen planting proposals on the boundary                 </td> </tr> <tr> <td>Historic Environment</td> <td>Both options are assessed separately, with Option 2 having significant effects and Option 1 having no significant effects.</td> </tr> <tr> <td>Geology and Hydrogeology</td> <td>Both options are assessed – there is no difference in the assessment findings between the two options</td> </tr> <tr> <td>Agriculture and Soils</td> <td>To provide a worst case, the assessment presented in this chapter considers all land within the DCO Site Boundary including the land needed to deliver both Option 1 and Option 2 of the Theddlethorpe Facility.</td> </tr> </tbody> </table>	Topic	Consideration of Alternatives	Ecology and Biodiversity	Option 1: assessment assumes no significant habitat loss as existing site is bare ground. Option 2: assessment included potential for permanent arable land habitat loss under the facility.	Landscape and Visual	Option 1: fully assessed including having its own viewpoints. Option 2: fully assessed including having its own viewpoints and also screen planting proposals on the boundary	Historic Environment	Both options are assessed separately, with Option 2 having significant effects and Option 1 having no significant effects.	Geology and Hydrogeology	Both options are assessed – there is no difference in the assessment findings between the two options	Agriculture and Soils	To provide a worst case, the assessment presented in this chapter considers all land within the DCO Site Boundary including the land needed to deliver both Option 1 and Option 2 of the Theddlethorpe Facility.
Topic	Consideration of Alternatives														
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ExA-Q.1.9	Question to	Question	Applicant response	
			Water	Both options are assessed separately with no substantial differences
			Traffic and Transport	The assessment as presented covers both options as there would be no difference in terms of construction routes or traffic numbers.
			Noise	Both options are assessed separately, and no significant effects predicted.
			Air Quality	There is no difference in the potential effects between the options, neither of which would have a significant effect.
			Climate	Currently, there is no material difference between Option 1 and Option 2 for the Theddlethorpe Facility.  There will be no material difference in carbon emissions when comparing between the two options.
			Socio-Economics.	Both options were assessed – there is no difference in the assessment findings between the two options
			Health and Wellbeing	This chapter draws on the assessment findings from other chapters and therefore draw on the individual assessment of options where necessary
			Materials and Waste	There is no difference in the potential effects between the two options, neither of which would have a significant effect.
			Major Accidents and Disasters.	There is no difference in the potential effects between the two options, neither of which would have a significant effect.
			<p><b>Optionality – Immingham</b></p> <p>The Description of the Proposed Development has been used by each of the technical disciplines as the basis for their assessment. Any receptors potentially affected by either route option was included in the assessment, ensuring a comprehensive assessment was undertaken of the two options within the Order Limits. For topics without spatial receptors such as climate change, the worst case was assessed which was the longest of the two routes.</p>	
1.9.11	Natural England All Local Authorities	<p><b>Cumulative effects</b></p> <p>In ES Chapter 6 [APP-048, Paragraph 6.11.4] it states that because ecological reports had not been submitted for other developments, it had not been possible to assess potential cumulative effects. This reasoning appears elsewhere across the ES as well. Are there any concerns about the Applicant's approach to determining or calculating</p>		

ExA-Q.1.9	Question to	Question	Applicant response
		cumulative effects or is the justification for not considering certain developments justified in this instance?	
1.9.12	Applicant	<p><b>Overall lifespan</b></p> <p>The ExA is unclear as to why there is not a known decommissioning date, as paragraph 3.1.12 [APP-045] states that the Viking fields have a known storage capacity of 300 million tonnes, and 3.7.9 states that the Scoping was undertaken on a 40-year lifespan. The ES refers to a minimum operational lifespan of 25 years throughout. The Applicant is requested to:</p> <ol style="list-style-type: none"> <li>1) Provide additional information on the anticipated decommissioning date.</li> <li>2) Provide a response on why this is not currently secured within the DCO.</li> <li>3) Provide a response as to how the ES has factored in the unknown date of decommissioning, in particular where an effect during the operational phase is considered to be temporary, or relies on a set period of time, for example operational greenhouse gas emissions.</li> </ol>	<p>Viking CCS has been awarded three carbon storage licences: CS005, CS023 and CS024. CS005 was the first licence to be awarded and the first site within that licence, will be targeted as the project's first store. A copy of these licences are provided in Appendix D. CS005 has been independently verified to provide a contingent storage resource of 300MT. It is expected that the two new licences, CS023 and CS024, have the potential to increase the total storage capacity of Viking by over 50%. The Applicant plans to submit the first draft Storage Permit application in Q2 2025. The storage of carbon dioxide in the United Kingdom's territorial waters and on the United Kingdom Continental Shelf ('UKCS') is subject to a licensing regime overseen by the NSTA. Anyone who wishes to explore for or use a geological feature for the long-term storage of carbon dioxide in a UK offshore area must hold a Carbon Dioxide Appraisal and Storage Licence ('CS Licence'), pursuant to section 18 of the Energy Act 20082 (the 'Act'). Under a CS Licence, Licensees require the grant of a storage permit by the NSTA for the construction of facilities for the purpose of injection of carbon dioxide with a view to storage within the licensed area and for such storage. The Storage Permit Application is made up of eight key documents which must fulfil the requirements of The Storage of Carbon Dioxide (Licensing etc.) Regulations 20103.</p> <p>1 &amp; 2) Emitters will be sequenced to the Proposed Development by the UK Government through the currently ongoing Track 2 process. The decommissioning date will be determined by emitters sequenced and the volume of CO<sub>2</sub> they bring to the system. (See 1.9.4 above). Final storage volumes (and therefore decommissioning date) will be subject to the award of additional licences that the Applicant believes may be made available through future CO<sub>2</sub> storage licencing rounds. Based on this, the Applicant has made the reasonable assumption that the Proposed Development could therefore operate for a minimum of 25 years. The Applicant does not however consider it necessary or appropriate to secure a decommissioning date or timescale within the draft DCO.</p> <p>3) Details of if and how duration influences the assessment findings presented in the ES are provided below:</p>
1.9.13	Applicant	<p><b>Determination of baseline</b></p> <p>It is also noted that some surveys, such as Agricultural Land Classification and ground investigations, will only take place post consent once the final pipeline route is known. The Applicant is requested to provide a list and update on the status of these surveys, and information as to how the conclusions of the relevant ES chapters are considered to be robust and provide a worst case scenario in the absence of surveys.</p>	<p><b>Agricultural Land Classification</b></p> <p><u>Proposed Survey:</u> Detailed soil survey and Agricultural Land Classification (ALC) assessment targeted to areas of agricultural land where there will be soil disturbance. Surveys will be undertaken to standard Natural England guidelines<sup>1</sup>, e.g., one auger boring per hectare, (with at least one boring per field) supported by pits dug in each main soil type to confirm the physical characteristics of the full depth of the soil resource.</p> <p><u>Status (as of April 2024):</u> Surveys to be undertaken post-consent when the Front-End Engineering Design (FEED) is confirmed and hence the exact areas of disturbance are known. The Applicant has committed to undertaking these surveys in the Draft CEMP [APP-068]. These</p>

<sup>1</sup> Natural England (2012). Technical Information Note 049, 'Agricultural Land Classification: protecting the Best and Most Versatile agricultural land'. Accessed 10 May 2023. Available at: <http://publications.naturalengland.org.uk/publication/35012>

ExA-Q.1.9	Question to	Question	Applicant response
			<p>surveys will inform the detailed Soil Management Plan (SMP) which is to be prepared prior to construction, as secured through the Draft CEMP [APP-068] and subsequent revisions.</p> <p>The Applicant intends to undertake these surveys as soon as possible post-consent, as the production of the detailed SMP is dependent upon these data.</p> <p><u>Robustness of Environmental Statement Chapter 10: Agriculture and Soils [APP-052]:</u> The baseline information used in the assessment of impacts to soils and agricultural land was taken from the most detailed published data for the Study Area. A desk-based approach to the gathering of baseline soils and ALC data is commonly employed in the assessment of linear energy infrastructure projects, such as the Proposed Development, and local examples of where this methodology has been used include Viking Link (an interconnector from Denmark with 60 km of underground cable through Lincolnshire) and Scotland England Green Link 2: English Onshore Scheme (a high voltage link with approximately 69.5 km of underground cable through North Yorkshire and the East Riding of Yorkshire). The impact assessment for the export cable corridor NSIP Hornsea Project Four Offshore Wind Farm which is coincident with the Proposed Development in Section 2 also follows this desk-based approach.</p> <p><u>Soil resources</u></p> <p>Although it is acknowledged that the baseline soils data (1:250,000 National Soil Map of England and Wales (NATMAP) Vector data taken from survey data from the Soil Survey of England and Wales) are not accurate to the field scale and only identifies soil associations and not their constituent soil series, it is considered that these data provide a robust baseline for the assessment. In line with Institute of Environmental Management and Assessment's (IEMA) guidance document 'A New Perspective on Land and Soil in Environmental Impact Assessment (2022)' (the IEMA guidance) the eleven soil associations identified within the Study Area were assessed as being of high, medium and low sensitivity based upon their susceptibility to damage during handling, considering factors such as soil texture, soil wetness class and Field Capacity Days<sup>2</sup>.</p> <p>The Draft CEMP, <i>ES Volume IV: Appendix 3.1 [APP-068]</i> and the Outline SMP <i>ES Volume IV: Appendix 10.1 [APP-096]</i> contain good practice soil management measures taken from guidance such as Defra (2009) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites and The Institute of Quarrying's (2021) Good Practice Guide for Handling Soils in Mineral Workings. The assessment concluded that the application of these measures (as secured through the detailed SMP) will ensure the structure, function and resilience of the soil resource is maintained. Consequently, no significant residual effects to the high, medium and low sensitivity soil resources present within the Study Area were identified.</p> <p>Although the detailed soil survey may identify additional high, medium or low sensitivity soil associations within the Study Area and provide a more detailed description of the soils present (potentially describing them to soil series level) and their geographic distribution, as these site-specific soils data will be used to inform the detailed SMP and the site/soil-specific mitigation measures within it, it is considered that all soils (both those currently known and any additional soil types identified) will receive appropriate mitigation through implementation of the SMP ensuring their structure, function and resilience is maintained.</p>

<sup>2</sup> Field Capacity Days – the number of days in which the soil is saturated with water and any water from rainfall will infiltrate quickly under the force of gravity or create waterlogging.

ExA-Q.1.9	Question to	Question	Applicant response
			<p>Therefore, the conclusions within ES Chapter 10: Agriculture and Soils <b>[APP-052]</b> are considered to be robust and provide a worst-case scenario in the absence of the detailed soil surveys.</p> <p><u>Agricultural land</u></p> <p>The baseline data used in the assessment of impacts to agricultural land was taken from the most detailed published ALC data covering the whole of the Study Area, the 1:250,000 scale Provisional ALC mapping, supplemented by detailed published Post-1988 ALC data where available.</p> <p>The chapter acknowledges that the 1:250,000 scale Provisional ALC mapping is not accurate at the field level as it generally does not pick up variations in ALC grade for areas less than approximately 80 ha. Additionally, as the mapping was published in the period 1967 to 1974 it is based on survey data collected prior to the issue of the revised guidelines in 1988. It therefore does not provide a subdivision of Grade 3 land into Subgrade 3a (good quality, best and most versatile (BMV)) and Subgrade 3b (moderate quality, non-BMV). These data do, however, provide a general indication of the predominant ALC grades within the Study Area and wider Region. Therefore, to better define the ALC grading of the land within the Study Area, and provide a more robust baseline for the assessment, the subdivision of Subgrade 3a and 3b land was calculated using the Post-1988 data where available and Natural England's Likelihood of Best and Most Versatile (BMV) Agricultural Land mapping for the remaining areas. Noting that the geographical distribution of the calculated areas of Subgrade 3a and 3b cannot be determined using this method.</p> <p>Although both BMV and non-BMV land would be directly impacted by the Proposed Development most impacts will be temporary and for the duration of the construction phase only, as all land within the pipeline corridor, temporary compounds and temporary accesses will be reinstated immediately following construction to its original condition and land use. The assessment concluded that in areas of temporary development the application of the good practice measures set out in the Outline SMP in <i>ES Volume IV: Appendix 10.1 [APP-096]</i> (see also text in Soils section above for further description) would ensure there is no discernible loss or reduction in soil functions or soil volumes that restrict or prevent the pre-construction land use from being reinstated (i.e., no downgrading of land quality would occur and the reinstated land would be returned to its pre-development ALC grade). Consequently, no residual significant effects to agricultural land due to temporary development (regardless of ALC grading) were identified. Although the detailed ALC data gathered through field surveys will more accurately define the geographical distribution of ALC grading within the Study Area, this would not change the outcome of the assessment as all land will be returned to its pre-development ALC grading. Therefore, the conclusions within ES Chapter 10: Agriculture and Soils <b>[APP-052]</b> relating to the impacts of temporary development on agricultural land are considered to be robust and provide a worst-case scenario in the absence of the detailed ALC data derived from field surveys.</p> <p>It is noted that the detailed ALC data will be used to provide baseline land quality data for the success of reinstatement within the pipeline working corridor to be measured against.</p> <p>Loss of agricultural land through above ground-built development or land use change is restricted to the Theddlethorpe Facility (Option 2) and its associated access, and the three Block Valve Stations. Where this development was shown as Grade 3 agricultural land on the Provisional ALC mapping (Theddlethorpe Facility (Option 2) and access, and Block Valve Stations 2 and 3), the assessment assumed a worst case of this land being all Subgrade 3a</p>



ExA-Q.1.9	Question to	Question	Applicant response				
			<p>(BMV). Therefore, the assessment considered a worst case for land quality in relation to these aspects of the Proposed Development.</p> <p>Therefore, the conclusions within ES Chapter 10: Agriculture and Soils [APP-052] relating to the impacts of above ground-built development or land use change on agricultural land (assessed as permanent loss of agricultural land) even with the absence of the detailed ALC field survey data, are considered to be robust and present a worst case scenario.</p> <p><b>Ground Investigation</b></p> <p>Ground Investigation survey forms part of the FEED Scope. The results of the Ground Investigation are unlikely to be available prior to the close of Examination.</p> <p><u>Robustness of Chapter 9: Geology and Hydrogeology [APP-051]</u></p> <p>The potential effects identified in the assessment for the construction and operation phases are based on an assumed worst case for the Proposed Development relating to the likelihood of soil and groundwater contamination being present.</p> <p>The assessment is based on available desk-based information which identified that most of the land outside of the industrial areas of Killingholme and Immingham Docks and the former Theddlethorpe Gas Terminal within the Order Limits is currently used for agriculture and has been so historically.</p> <p>he assessment assumed that land at the Immingham and Theddlethorpe Facilities will have been remediated (if required), with mitigation put in place to avoid disturbing remedial works.</p> <p>Ground investigation will be undertaken prior to the construction phase. Ground investigation in the primarily agricultural areas is expected to confirm the effects identified in the assessment and could potentially even reduce the effects. Therefore, the conclusions provided in the Geology and Hydrogeology chapter are considered to be robust.</p> <p><u>Archaeological Trial Trenching</u></p> <p>The Applicant has undertaken a geophysical survey of the Order Limits (a copy of which has been submitted at Deadline 1 (EN070008/APP/9.7)). The results of this have been used to develop a comprehensive trial trenching programme. A Written Scheme of Investigation associated with the proposed trenching works has now been agreed with the relevant county archaeologists and work expected to commence in April 2024. The updated version of the Written Scheme of Investigation will be submitted at Deadline 2.</p>				
1.9.14	Applicant	<p><b>Monitoring of mitigation</b></p> <p>It is noted that some chapters of the ES (Chapters 7, 9, 10, 12, 13, 15, 16, 17, 18, 19 and 20) do not have a section describing the required monitoring of effects. This is despite some of these having residual significant effects which may require monitoring, and some chapters which do have monitoring but do not have Likely Significant Effects (LSE). The Applicant is requested to provide a justification for the approach to describing monitoring measures within the ES.</p>	<p>Monitoring may be required for two reasons. Firstly, it may be required to check that mitigation proposed to reduce effects is working as anticipated. Secondly, monitoring may be suggested to ensure that actual effects are no greater than the effects as predicted in the ES. Further information is provided below for those chapters that do not currently specifically refer to monitoring.</p> <table border="1"> <thead> <tr> <th>Chapter</th> <th>Comments on monitoring proposals</th> </tr> </thead> <tbody> <tr> <td>7. Landscape and Visual</td> <td>Effects on landscape character and visual amenity are considered to be subjective and are not typically monitored in the way that quantitative noise/dust or air quality or other environmental effects are.</td> </tr> </tbody> </table>	Chapter	Comments on monitoring proposals	7. Landscape and Visual	Effects on landscape character and visual amenity are considered to be subjective and are not typically monitored in the way that quantitative noise/dust or air quality or other environmental effects are.
Chapter	Comments on monitoring proposals						
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ExA-Q.1.9	Question to	Question	Applicant response	
				<p>Landscape mitigation monitoring, linked to the outcomes of the LVIA are monitored as set out in the OLEMP <b>[APP-127]</b>.</p> <p>The Outline LEMP is structured as follows:</p> <ul style="list-style-type: none"> <li>- Section 1.3 details the measures required for the effective management and maintenance of the landscape and biodiversity mitigation proposals; and</li> <li>- Section 1.4 describes post-construction monitoring to determine that the functions documented within this Outline LEMP are being achieved and whether remedial action may be required.</li> </ul> <p>A post-construction monitoring programme will be formalised and included within the detailed LEMP. The surveys will involve inspection of the trees, hedgerows, and grassland to ensure that they are being managed accordingly.</p>
			9. Geology and Hydrogeology	<p>Monitoring of effects will be secured via specific measures in the CEMP e.g. completion of a ground investigation, monitoring of groundwater levels to assess groundwater profiles to inform dewatering requirements, a watching brief during construction works. Specific commitments included within the Draft CEMP are outlined in Section 9.8 of the chapter <b>[APP-051]</b>.</p> <p>If, following the Ground Investigation and subsequent assessment, consultation with the EA identifies the requirement for monitoring during or following construction works (for example if it is necessary to undertake HDD or dewatering within the Chalk, or if contamination were to be encountered), this will be implemented. This is as per the EA's Approach to Groundwater Protection document (Ref 9-34 in <b>[APP-051]</b>) and referenced in relation to dewatering in Section 9.8.6 of APP-051.</p>
			10. Agriculture and Soils	<p>There are no significant adverse effects reported that would require monitoring.</p>

ExA-Q.1.9	Question to	Question	Applicant response	
			12. Traffic and Transport	In terms of specific monitoring there would be the monitoring of the construction routes (methodology to be agreed) so that construction vehicles do not use routes that are prohibited and stick to those routes outlined within the assessment.
			13. Noise	Noise monitoring would be undertaken at sensitive receptors, with their agreement, to confirm that mitigation measures adopted are sufficient to mitigate what would otherwise have been significant effects. This has been added to the Draft CEMP <b>[APP-068]</b> as measure I27.
			15. Climate	There are no significant adverse effects reported that would require monitoring.
			16. Socio-Economics.	There are no significant adverse effects reported that would require monitoring.
			17. Health and Wellbeing	There are no significant adverse effects reported that would require monitoring.
			18. Materials and Waste	The materials and waste chapter does not have a specific monitoring section because there are no residual significant effects. However, Section 18.8 sets out that additional (secondary) mitigation measures and procedures will be defined in the final CEMP and Site Waste Management Plan (SWMP). The Draft SWMP ES Volume IV: Appendix 18.1 <b>[APP-113]</b> outlines key performance indicators and monitoring requirements including example tables in Annex's A, B and C.
			19. Major Accidents and Disasters.	There are no significant adverse effects reported that would require monitoring. Ongoing measures and procedures will be in place to prevent any incidents occurring.

**Table 10: Q.1.10 Flood Risk, Hydrology and Water Resources**

ExA-Q.1.10	Question to	Question	Applicant response
<b>Flood Risk</b>			
1.10.1	Applicant	<p><b>Compounds and construction areas</b></p> <p>It is stated that hardstanding at compounds would be of a minor scale and would therefore not result in significant water run-off [APP-053, Paragraph 11.7.45]. In this regard:</p> <p>1) The compounds measure 21,500m<sup>2</sup>, 17,100m<sup>2</sup> and 13,000m<sup>2</sup> each. On what basis has the laying of hardstanding on areas well in excess of one hectare been deemed 'minor'?</p> <p>2) The cited paragraph makes no reference to laydown areas, which are purported to be a minimum 400m<sup>2</sup> each [APP-053, Paragraph 11.7.17]. Whilst the exact number may not be known, explain the general form of a laydown area and what is anticipated in respect of surface water management.</p>	<p>1) Because of the design of the compounds, the majority of which will be permeable or semi-permeable, the size of the compounds is not considered to be a substantial contributing factor to the potential scale of site runoff. The majority of the northern and central construction compounds will comprise of gravels (pebble stone, hardcore or MOT type 1), overlying a permeable geotextile, which overlies a layer of sand.</p> <p>The only impermeable areas are anticipated to be associated with the buildings and entrance roads. The southern compound is sited on an existing area of hardstanding, so there is no anticipated increase in impermeable area.</p> <p>The construction compound and laydown area drainage will be installed following best practice measures, to effectively manage construction pollution, sediment, and control water runoff. This will be designed to prevent ponding or flooding on the site and to prevent increased runoff to offsite. The key prevention in increased runoff will be through maintaining the permeability through gravels and geotextiles, however a temporary drainage system, which may involve SuDS for attenuation may be constructed (see ES Chapter 11: Water Environment [APP-053] Table 11-22). This has been reinforced in Measure P2 in the Draft CEMP (<b>document reference 6.4.3.1</b>).</p> <p>The drainage system will be designed and installed during site setup including:</p> <ul style="list-style-type: none"> <li>• Regular inspection/maintenance during the construction phase to prevent blockages;</li> <li>• Inclusion of appropriate erosion and sediment control measures to minimize the sediment run off;</li> <li>• Regular inspections to ensure drainage performance is not compromised by construction activities and remedial action taken if so;</li> <li>• Coordinating the installation with other construction activities to prevent conflicts or delays;</li> <li>• Inclusions of SuDS, including swales and attenuation ponds, if required; and</li> <li>• The drainage of the construction compounds will be designed, following ground investigations, by the contractors suitably qualified engineer.</li> </ul> <p>2) Preparatory works for the laydown areas will involve some site clearance work, minor earthworks operations to level the site, drainage and works for the car park and minor administration facilities.</p> <p>Drainage will be similar to the construction compound but on a smaller scale to suit each site location accordingly, and additionally the key mitigation is through maintaining permeability. It is likely that drainage on compounds, laydown areas and other temporary areas is likely to incorporate swales and French drains to convey flows, bunds and diversion drains to prevent upstream overland flow reaching the sites, and ponds to provide attenuation and settlement of any sediment. The design of the drainage, and the potential provision of infiltration, will be designed during FEED and following ground investigations.</p>



ExA-Q.1.10	Question to	Question	Applicant response
1.10.2	Applicant	<p><b>Stockpiles</b></p> <p>The ExA are concerned that storage of equipment, stockpiled soil, spoil and other construction materials would be within the flood plain. However, there appears no assessment as to how such stockpiles would affect the operation of a flood plain, nor how water would be displaced as a result of them. Update the flood risk assessment [APP-101] and ES Chapter 11 [APP-053] as necessary and, for the purposes of this question, provide details on how stockpiles would be managed to avoid adverse flood impacts.</p>	<p>In areas where fluvial floodplains are clearly mapped by the Environment Agency, (EA Flood Map for Planning, Figure 1 in the Environmental Statement - Volume IV - Appendix 11-5: Flood Risk Assessment [APP-101]) (i.e., Sections 2, 3 and 4), there will be no storage of materials within these mapped flood extents. In areas where the EA Flood Map for Planning shows combined tidal and fluvial floodplains (i.e., Section 1 and 5), and fluvial floodplains cannot be identified separately from areas at risk of coastal flooding, a reasonable set back will be provided. There will be no storage of materials within 8m of rivers. Further discussions with the EA (for Main Rivers) and/or the Lead Local Flood Authority (LLFA)/Internal Drainage Boards (for Ordinary Watercourses), will be undertaken as the design evolves through the FEED stage.</p> <p>Note that sections of pipes may be temporarily located within the fluvial floodplain at open cut watercourse crossing locations whilst the pipeline is being laid out and welded in place. This is an essential step in the pipeline construction process. These activities will take place during the summer months to avoid times of higher flows. ES Chapter 11: Water Environment [APP-053] will be updated to include this wording at Deadline 2.</p> <p>Where materials are stored within the tidal breach flood extent during the construction phase, stockpiles will be managed in line with best practice and mitigation set out in the Draft CEMP [APP-068] including E23 Water Management Plan, F2 Soil Management Plan, G20 Soil and sub-soil, J31 Cover, re-seed, vegetation of stockpiles, and J34 Revegetation of stockpiles.</p>
1.10.3	Applicant	<p><b>Flood Risk Probability</b></p> <p>The Flood Risk Assessment (FRA) [APP-101, Figures 9 and 10] illustrates the results of the 2115 scenarios for the 0.5% Annual Exceedance Probability (AEP) and 0.1% AEP events taking into account Higher Central and Upper End Sea level climate change allowances (set out in Section 4.2 of the FRA). These figures indicate that future climate change would lead to the overtopping of existing defences and flooding of the Immingham and Theddlethorpe facilities (paragraph 5.13.14). As a result, paragraph 5.13.15 states that the current 'Hold the Line' policy may lead to the raising of flood embankments to maintain the standard of protection. However, the FRA does not provide any evidence to demonstrate a commitment to raise the defences from the Applicant or relevant bodies. Explain with reasons.</p>	<p>With the exception of the 'Hold the Line' policy in the Environment Agency Shoreline Management Plan there is no commitment from relevant bodies or the Applicant to raise the tidal flood defences; therefore, the FRA [APP-101] does not rely on embankment raising as a mitigation measure.</p> <p>The 2115 overtopping and breach flood extents and depth mapping provided by the Environment Agency are presented as Figures 9 and 10 in the FRA [APP-101]. Flood defences for this scenario remain as the current day scenario with no increase in the level/standard of protection.</p> <p>Recommended mitigation measures for a future breach and/or overtopping event, as set out in the FRA [APP-101] and Draft CEMP [APP-068] have been designed based on the 2115 breach flood water depths for the operational phase of the Proposed Development.</p> <p>Should tidal flood defences be raised as part of the Environment Agency 'Hold the Line' policy over the lifetime of the development this will provide a betterment in terms of flood risk mitigation, however the risk of a breach or overtopping event occurring still remains.</p>
1.10.4	Applicant	<p><b>Flood Risk scenario</b></p> <p>The FRA [APP-101, Paragraph 4.2.4] states that an allowance of 1.14m for sea level rise was considered appropriate to assess the 2115 scenario for the Proposed Development. However, this figure does not correspond to the tidal climate change allowances provided in Table 8 and set out in the Flood Risk and Coastal Change Planning Practice Guidance (PPG). The FRA does not provide clear justification as to why the 1.14m allowance for sea level rise is appropriate. Explain with reasons.</p>	<p>The 1.14m allowance for sea level rise referred to in the FRA [APP-101], Paragraph 4.2.4 is taken from Volume 4 Breach Flood Mapping of the 2010 Northern Area Tidal Modelling study. This study considered the effect of climate conditions in the year 2115, approximately 100 years from the baseline year of 2006. Based on the methodology outlined in Defra's FCDPAG3 Economic Appraisal Supplementary Note to Operating Authorities – Climate Change Impacts (October 2006), sea level may rise by up to 1.14 m between the baseline year (2006) and 2115.</p> <p>The outputs from the 2010 Northern Area Tidal Modelling study are used by the Environment Agency to map the breach flood extent and water depths for a breach flood event in the year 2115. These flood extents and water depth maps, provided by the Environment Agency, are presented in the FRA Figures 11-12 [APP-101].</p>

ExA-Q.1.10	Question to	Question	Applicant response
			<p>To clarify, the flood extent for the 2115 breach flood extent and flood water depths used in the assessment are based on a sea level climate change allowance of 1.14m and therefore the climate change allowances presented in Table 8 and set out in the Flood Risk and Coastal Change Planning Practice Guidance (PPG) have not been used to inform the breach flood scenario for the year 2115.</p> <p>The climate change allowances presented in Table 8 and set out in the Flood Risk and Coastal Change PPG have however been used to derive the increase in sea level to the year 2025 for the construction phase as part of the assessment in the FRA Tables 13-14 [APP-101].</p>
1.10.5	Applicant	<p><b>Breach depths</b></p> <p>Can the Applicant explain why average breach depths have been provided in Table 15 of the FRA [APP-101] rather than maximum breach depths and how this gives an assessment of the worst-case scenario of the flood risk?</p>	<p>Maximum flood depths for the Immingham Facility and Theddlethorpe Facility were extracted from the flood depth grids taken from the Environment Agency 2010 Northern Area Tidal Modelling Study. The maximum flood depths were then compared against ground levels for the same area from the Digital Terrain Model (DTM) which showed that the areas of highest maximum flood depths correlated with small, isolated areas of topographic lows within the Sites. When these flood depths are applied to the average site level this causes an over estimation of flood depth for the breach events at the Sites, meaning the assessment findings would be based on an unrealistic worst-case scenario. Consequently, the average breach flood water depths provide a more appropriate worst-case value for assessing flood risk from a breach event.</p> <p>Further explanation and analysis are provided in a technical note being developed in response to the Environment Agency Relevant Representation, which also raises this issue. Once complete this technical note will be shared with the ExA at Deadline 2.</p>
1.10.6	Environment Agency	<p><b>Receptors</b></p> <p>Is the EA satisfied that all potential downstream water environment receptors have been considered in the assessment?</p>	
1.10.7	Environment Agency	<p><b>Climate Change Allowances</b></p> <p>Are the EA content that appropriate climate change allowances have been applied in the FRA [APP-101]?</p>	
1.10.8	Applicant	<p><b>Fluvial Flood Risk</b></p> <p>The conclusion of the FRA [APP-101] indicates that fluvial flood risk to the IAGI and TAGI facilities has been considered in the FRA. However, no evidence has been provided to suggest that the fluvial flood risk from and to the Immingham Facility and Theddlethorpe Facility elements of the Proposed Development have been assessed in Sections 5 and 6, respectively. The Applicant is requested to provide additional information on the fluvial flood risk.</p>	<p>The IAGI and TAGI facilities are not considered to be at risk of flooding from fluvial main rivers. South Killingholme Drain, an Ordinary Watercourse, is located to the north of the IAGI Facility and the surrounding area is drained via a network of small land drainage ditches.</p> <p>There is no national mapping of the predicted flood extents associated with South Killingholme Drain and land drains available within the development site boundary. It is possible to use the Environment Agency Risk of Flooding from Surface Water (RoFSW) flood map, Figure 4 [APP-101] as a proxy to understand flood risk from the Ordinary Watercourses and land drainage channels.</p> <p>A review of this dataset indicates there is no 'out of bank' flooding along the drain during the 1% AEP event. During the 0.1% AEP event flood water extends out from the existing South Killingholme Drain across the IAGI Site to the south with flood depths between 300 mm and 900 mm.</p> <p>However, the South Killingholme Drain is proposed to be diverted as part of the Proposed VPI Development which is proposed on land to the north of the IAGI Site. The drain, which</p>

ExA-Q.1.10	Question to	Question	Applicant response
			<p>currently crosses the proposed VPI development area, will be diverted along the northern boundary of the IAGI and will tie in with the current culverted sections where the drain enters the VPI Site from the west (from the Phillips 66 site and under the railway) and where the drain leaves the VPI Site (to the east beneath Rosper Road).</p> <p>The design of the diversion provides for a slightly longer channel with an increase in capacity above that currently provided by the South Killingholme Drain; therefore, the risk of flooding over the lifetime of the Proposed Development will remain low. Mitigation proposed for tidal sources of flooding for the IAGI facility is considered to be sufficient.</p> <p>The area surrounding the Theddlethorpe Facility area is drained via a network of small land drainage ditches.</p> <p>There is no national mapping of the predicted flood extents associated with the land drains available in proximity of the development site boundary. It is possible to use the Environment Agency RoFSW flood map [APP-101, Figure 4] as a proxy to understand flood risk from the land drainage channels.</p> <p>A review of this dataset indicates there is no 'out of bank' flooding along the drain during either a 1% or 0.1% AEP event, therefore it is considered that the Theddlethorpe Facility is located in Flood Zone 1 and is at low risk of flooding from fluvial sources.</p> <p>The FRA [APP-101] is being updated to include the assessment of fluvial flood risk for the Immingham and Theddlethorpe facilities in response to the Environment Agency's Relevant Representation. Once complete the updated FRA (Revision A) will also be shared with the ExA at Deadline 2.</p>
1.10.9	Applicant	<p><b>Tidal Flooding</b></p> <p>The FRA [APP-101] does not assess the risk of tidal flooding during construction of the buried pipeline in Sections 1 and 5 of the Proposed Development. Paragraph 5.12.1 states that as the pipeline would be below ground across its entire route during the operational phase the risk of tidal flooding is low, and no mitigation is required. However, no such statement is provided in relation to construction. The relevant representation provided by the Environment Agency also raises a number of other areas of disagreement in relation to tidal flood risk. The Applicant is requested to provide additional information on the tidal flood risk and respond to the points raised by the Environment Agency.</p>	<p>The entirety of the Order Limits is located in an area shown to benefit from the presence of tidal flood defences therefore the risk of flooding from tidal sources is low, however there remains a risk of flooding should there be overtopping or a breach of the flood defences.</p> <p>As outlined in the Section 5.13 of the FRA [APP-101] the Immingham and Theddlethorpe facilities, including the associated buried pipeline in Section 1 and Section 5, are located outside of the current day overtopping flood water extent therefore during the construction phase the residual risk of flooding should overtopping of the flood defences occur is low.</p> <p>During the construction phase of the Immingham Facility, Theddlethorpe Facility, Southern Construction Compound and associated pipeline in Section 1 and Section 5 there is a risk of flooding to the construction site, given that the works will take place within the residual breach flood extent. Table 15 in the FRA [APP-101] presents the potential flood depths at the Immingham Facility and Theddlethorpe Facility in the unlikely event that a breach event occurs.</p> <p>To mitigate this risk, the following mitigation measures, as set out in the draft CEMP [APP-068] are recommended:</p> <ul style="list-style-type: none"> <li>• G1: Adoption of an appropriate Flood Warning and Evacuation Plan (FWEP);</li> <li>• P7: Construction works should not be undertaken during periods of heavy rainfall;</li> <li>• P8: Weather forecasts and Flood Warnings should be monitored regularly during the construction phase; and</li> <li>• P9: Minimal storage of materials/plant in the floodplain.</li> </ul>

ExA-Q.1.10	Question to	Question	Applicant response
			<p>The Southern Construction Compound, which will be used as a pipeline storage area during the construction phase, will be secured, and materials stored appropriately in line with best practice to prevent adverse impacts on flood risk. The displacement of water due to construction materials being stored within the breach flood extent would be minimal given the extent and depth of flooding across the surrounding area should a breach event occur. As the compound is a temporary feature during the construction phase and the risk of flooding is residual there is no requirement to provide compensatory storage within the tidal floodplain.</p> <p>The FRA [APP-101] is being updated as Revision A to reflect the response provided here and to address other comments raised by the Environment Agency in relation to tidal flood risk. The updated FRA (Revision A) will be provided at Deadline 2.</p>
1.10.10	Applicant	<p><b>Assessment of cumulative effects</b></p> <p>Can the Applicant explain why an assessment of cumulative effects on the water environment during operation of the Proposed Development has not been provided in the ES?</p>	<p>The cumulative effects during the operational period of the Proposed Development have been set out in Section 11.11 'Cumulative Effects' of ES Chapter 11: Water Environment [APP-053]. While the focus of the cumulative assessment was on the construction phase, where necessary operational cumulative effects were also assessed.</p> <p>The section is specifically set out to distinguish between 'Intra-Project' and 'Inter-Project' effects. As stated in paragraph 11.11.2 [APP-053], the Intra-Project effects have been addressed through mitigation at the source of impact, and the intra-project cumulative impact has been assessed within the main assessment in Table 11-26, where the impacts are assessed as negligible given that the pipeline will be buried.</p> <p>The Inter-Project effects addresses the cumulative effects of other developments both during the construction and the operational phases, specifically in 11.11.2 - 11.11.8 [APP-053].</p> <p>For residential projects:</p> <p><i>'There is also potential for operational impacts on water quality due to additional runoff from development roads and additional traffic mobilising pollution on local roads, additional water needs and additional wastewater production ... and therefore are unlikely to result in any significant cumulative effects.'</i></p> <p>For energy infrastructure projects:</p> <p><i>'The operation of these may have effects on water availability and water quality due to operation... and is assessed as having negligible effects on the watercourse for construction and operation... On this basis there are not considered to be any significant cumulative effects.'</i></p> <p>For carbon capture projects:</p> <p><i>'...and is assessed as having negligible effects on the watercourse for construction and operation... On this basis there are not considered to be any significant cumulative effects.'</i></p> <p>For solar farm projects:</p> <p><i>'...and the operation will result in increased the hardstanding in the area. .... On this basis there are not considered to be any significant cumulative effects.'</i></p> <p>For general infrastructure projects:</p> <p><i>'...and is assessed as having negligible effects on the watercourse for construction and operation. On this basis there are not considered to be any significant cumulative effects.'</i></p>



ExA-Q.1.10	Question to	Question	Applicant response
1.10.11	Applicant	<p><b>Monitoring during operation and decommissioning</b></p> <p>Monitoring activities are only proposed to be undertaken during the construction phase of the Proposed Development. No monitoring is proposed for the operational or decommissioning phases. Can the Applicant confirm why this approach is considered acceptable.</p>	<p>The Applicant does not propose surface water monitoring during the operational phase of the development, as the impact assessment [APP-053] does not identify any potentially significant water quality or quantity impacts associated with the Proposed Development.</p> <p>The CO<sub>2</sub> pipeline will be buried to a suitable cover beneath the ground and watercourses. The above ground infrastructure will not have any sewage or process water discharges and will be lightly trafficked. The operation is not anticipated to require any abstractions or discharges above stormwater runoff, which will be mitigated through the Drainage Strategy [AS-024]. Therefore, it is not anticipated that the Proposed Development will result in water quality or flow impacts during operation, and no monitoring during operation is necessary.</p> <p>Any repair or maintenance activities required during the operational life of the underground pipeline may result in impacts similar to those identified during construction but limited to the area of works.</p> <p>Additionally, the Applicant has not included monitoring for the decommissioning phase as a specific line item, but it is anticipated that it will be required. It has been considered within the impact assessment in ES Chapter 11: Water Environment [APP-053] that the pipeline will be left in-situ during decommissioning and the impacts will be associated with the removal of above-ground facilities. Any monitoring required would be identified and contained within a Decommissioning Environmental Management Plan and would be tailored to the decommissioning activities taking place. ES Chapter 11: Water Environment [APP-053] paragraph 11.8.8 to 11.8.9 states that:</p> <p><i>“The decommissioning phase would apply similar design and mitigation measures as the Construction Phase... The CEMP (Decommissioning) would be prepared and submitted prior to decommissioning of the Project for approval by the relevant bodies. The DEMP would be implemented by the Principal Contractor and would detail the types of risks pertinent to the construction works and the mitigation measures that would be required to avoid, minimise and reduce impacts of activities as far as practicable.”</i></p>
1.10.12	Applicant Environment Agency	<p><b>Hold the line</b></p> <p>Paragraph 5.13.15 of the FRA [APP-101] states that the current ‘Hold the Line’ policy may lead to the raising of flood embankments to maintain the standard of protection.</p> <p>To the Applicant - Can the Applicant confirm whether the assessment undertaken relies on embankment raising as a mitigation measure, or whether the effects of the ‘hold the line’ policy are considered within the future baseline scenario against which to assess the effects of flood risk.</p> <p>To the Environment Agency - Can the EA explain to what extent raising the flood embankments can be relied upon as mitigation to maintain the necessary standard of protection?</p>	<p>The overtopping and breach flood extents and depth mapping provided by the Environment Agency are presented as Figures 7 to 12 in the FRA [APP-101]. These flood depths/extents for both the current day and year 2115 scenarios are based on the current level/standard of protection provided by the tidal flood defences, and does not therefore include embankment raising.</p> <p>The assessment does not rely on embankment raising as a mitigation measure and therefore provides a conservative assessment of residual flood risk from tidal sources and recommended mitigation measures for a breach and/or overtopping event have been designed based on these conservative flood water depths for the operational phase of the Project.</p> <p>Should tidal flood defences be raised as part of the EA ‘Hold the Line’ policy over the lifetime of the development this will provide a betterment in terms of flood risk mitigation, however the risk of a breach or overtopping event occurring still remains.</p>
1.10.13	Applicant Environment Agency	<p><b>Sustainable urban drainage (SuDS)</b></p> <p>Can the Applicant provide evidence to demonstrate that the SuDS measures described in the Drainage Strategy [APP-099] are adequate and can be delivered within the Order Limits of the</p>	<p>The Applicant is confident that the SuDS measures described in the Drainage Strategy [AS-024] are adequate and can be delivered within the Order Limits.</p> <p>Annex C of the Drainage Strategy (Proposed Drainage Plans) shows plans of the proposed drainage, incorporating SuDS measures such as infiltration trenches, swales, attenuation, and</p>

ExA-Q.1.10	Question to	Question	Applicant response
		Proposed Development? A supporting plan/ figure would be helpful to illustrate the potential locations of such measures. Is the EA satisfied that the SuDS measures proposed are adequate to manage and attenuate surface water from the Proposed Development?	<p>other drainage features, to be within the Order Limits. Noted that the Drainage Strategy [APP-099] annexes were not included within the DCO documents, However these were provided as [AS-024].</p> <p>The Drainage Strategy [AS-024] shows that the drainage is adequate to manage and attenuate surface water. The Environment Agency have stated that "The approach, assessment and conclusions as reported in the Drainage Strategy [APP-099] are considered appropriate".</p>
1.10.14	Applicant	<p><b>Confidence Bound Levels</b></p> <p>Can the Applicant explain why the 50% confidence bound levels have been applied to:</p> <p>1) Extreme Sea Levels in Tables 13, 14, 16 and Table 17 of the FRA [APP-101], when the Environment Agency advise that a 97.5% confidence bound is used?</p> <p>2) H++ Sensitivity Test in Table 20 of the FRA [APP-101], when the Environment Agency advise that a 97.5% confidence bound is used?</p>	<p>Although the Proposed Development is considered to be Essential Infrastructure, as defined in the Flood Risk and Coastal Change PPG, a significant proportion of the development will be located below ground and therefore not at risk from above ground flood risk sources. The above ground development comprises 3 Block Valve Stations (located within Section 2, Section 3 and Section 4, all of which are within Flood Zone 1), and the Immingham and Theddlethorpe Facilities in Section 1 and Section 5 respectively. The Immingham Facility Control Room is the only area of the development that will be manned, and the Proposed Development would be shut down during a flood event. For this reason, it was considered appropriate to apply the 50% confidence bound levels in the assessment for both the extreme sea levels and the H++ Sensitivity Test.</p> <p>However, the Applicant appreciates that the 97.5% confidence bound level represents a worst-case scenario for tidal water levels, therefore Tables 13, 14, 16, 17 and Table 20 (H++ Sensitivity Test) of the FRA [APP-101] have been updated to include the 97.5% confidence bound levels. A copy of the updated FRA (Revision A) will be provided at Deadline 2.</p> <p>The inclusion of the 97.5% confidence levels for extreme sea levels and the H++ Sensitivity Test in the assessment does not change the outcomes of the assessment.</p>
1.10.15	Applicant	<p><b>Emergency Plans</b></p> <p>The ExA requests the following:</p> <p>1) Can the Applicant explain how emergency plans and procedures would be secured to ensure the safe shutdown of operation in the event of a breach event?</p> <p>2) Can the Applicant provide further detail to clarify whether the entire pipeline would be shut down in the event of flooding to one of the facilities or if shutdown arrangements to the pipeline is dependent on the location/ extent of flooding and the facilities affected?</p> <p>3) Can the Applicant provide an indication as to how and where safe refuge provision will be provided as part of the Flood Warning and Evacuation Plan? A supporting plan/ figure would be useful to illustrate the potential locations of such provision.</p> <p>4) Can the Applicant describe what mitigation measures are proposed to ensure that the operators of the Immingham Facility, including the Central Control Room, will be safe in the event of a flood?</p>	<p>1)The Applicant has amended the draft Operational Phase Mitigation [APP-073] to include the following commitment:</p> <p><i>"The Applicant will prepare an Emergency Response Plan which covers potential emergency scenarios, including shut down procedures. This Emergency Response Plan will be regularly tested through desk top exercises."</i></p> <p>An outline of the content of what such a plan must include is set out in the Draft Emergency Response Plan [APP-116].</p> <p>Requirement 15 of the draft DCO includes a requirement for the undertaker to submit an Operational Phase Mitigation plan to the local planning authority for approval no later than three months prior to planned completion of commissioning of the Proposed Development. Thereafter the approved plan must be implemented. This therefore secures the requirement to provide a plan of this nature.</p> <p>An update to the Operational Phase Mitigation Plan (Revision A) has been provided at Deadline 1 (document reference 6.3.3.6).</p> <p>2)Shutdown plans will be developed as part of the FEED design. These will be in line with all prevailing safety requirements and will include details of shut down sequencing.</p>

ExA-Q.1.10	Question to	Question	Applicant response
			<p>3) Only the Immingham Facility will be manned permanently, the Theddlethorpe Facility can be remotely controlled, while the block valves only need to be accessed for maintenance and are not within a mapped floodplain.</p> <p>The base case for the Theddlethorpe facility is that it will not require safe refuge within the facility, as the warning procedures will ensure that staff do not attend site during conditions that could result in a breach of defences (therefore no safe refuge provision has been identified at this stage), however this will be revisited through the FEED stage.</p> <p>The base case for Immingham is that the site will share welfare facilities, including evacuation routes and safe refuge, with the VPI site. As such no safe refuge provisions within the Immingham Site have been identified at this stage, however this will also be revisited.</p> <p>4) The Order Limits include for a walkway between the Immingham Facility and the VPI site. Details of this exit route will be included in the flood warning procedures.</p>
1.10.16	Applicant	<p><b>Floodplain compensatory storage</b></p> <p>Can the Applicant confirm whether any floodplain compensatory storage would be required to mitigate potential effects from the siting of the Immingham and Theddlethorpe facilities as well as some of the pipeline route, temporary compounds, temporary working, access and laydown areas that are located within the floodplain?</p>	<p>Should a breach event occur along the tidal defences near Immingham or Theddlethorpe, the onset of water would be extremely quick, especially at the Theddlethorpe Facility. It is unlikely, given the extent and depth of flooding along the South Humber Bank near Immingham and Theddlethorpe should a breach occur, that the Project will increase the risk of flooding off-site to surrounding land as these areas would be flooded to the same depth as the Site. Any increase in flood water level is likely to be insignificant and compensatory storage is not required.</p> <p>It is the Applicant's intention to avoid storage of materials within the fluvial floodplain during construction. In areas where fluvial floodplains are clearly mapped by the Environment Agency (Sections 2, 3 and 4), there will be no storage of materials within these mapped flood extents. In areas where the EA Flood Map for Planning Figure 1 [APP-101] shows combined tidal and fluvial floodplains (Section 1 and 5), and fluvial floodplains cannot be identified separately from tidal flooding, a reasonable set back will be provided, further than 8m from Main Rivers, where there will be no storage of materials, subject to further discussions with the EA (for Main Rivers) or the LLFA/Internal Drainage Board (for Ordinary Watercourses), as the project design evolves through the FEED stage.</p> <p>The displacement of water due to construction materials being stored within the tidal floodplain would be minimal given the extent and depth of flooding across the surrounding area should a breach event occur. As the compound is a temporary feature and the risk of flooding is residual there is no requirement to provide compensatory storage within the tidal floodplain.</p>
<b>Hydrogeology and Groundwater</b>			
1.10.17	Environment Agency	<p><b>Assessment methodology</b></p> <p>The Applicant [APP-051, Paragraph 9.4.3] has relied upon the Design Manual for Roads and Bridges (DMRB) LA109 to assess effects arising from this project. Can the EA confirm that this is an acceptable starting point and, if so, why?</p>	
1.10.18	Applicant	<p><b>Sample size</b></p>	<p>The Applicant considers that the site surveys outlined in ES Chapter 9: Geology and Hydrogeology [APP-051], Paragraph 9.5.5 were sufficient to assess effects and draw</p>



ExA-Q.1.10	Question to	Question	Applicant response
	Environment Agency	It is stated site surveys were carried out on 22 and 23 January 2023 [APP-051, Paragraph 9.5.5]. No other surveys are reported. Is this a sufficient sample size from which to assess effects and draw conclusions and, if so, why?	<p>conclusions. The surveys were undertaken primarily to confirm current land-use at the time of the assessment (already identified using desk-based resources) and identify any features of note that may affect the assessment. Generally, the land-use is unlikely to change in the areas visited (including a designated Source Protection Zone 1, an area where old chalk pits were observed on historical mapping, residential housing, a water treatment works and Mablethorpe Beach). The locations of the Immingham Facility and Theddlethorpe Facility are currently disused and will be redeveloped for the Proposed Development, with surrounding industrial land-uses unlikely to change based on the historical and current uses of the areas the facilities are located in. As such, completing additional site surveys during the period of assessment was not deemed necessary.</p> <p>The Application notes that ground investigation surveys will be undertaken as part of the FEED contract (see response to question 1.9.13) to further assess the geological and hydrogeological conditions along the route, however such survey information was not considered necessary for the purposes of EIA.</p>
1.10.19	Applicant	<p><b>Worst-case and embedded mitigation</b></p> <p>It is noted that only one embedded mitigation, a routeing choice in sections 3 and 4, was applied during the project development [APP-051, Paragraph 9.6.5]. Can it be explained why no specific measures were adopted for the IAGI or the TAGI, where previously developed land gives rise to a higher likelihood of contaminants being present and disturbed?</p>	<p>No specific measures were adopted for the IAGI or the TAGI because as stated in paragraph 9.4.8 of the ES Chapter 9: Geology and Hydrogeology [APP-051], the assessment was completed with the assumption that by the time of construction for the Proposed Development, remediation (if required) will have been undertaken. It has been assumed that the area of the proposed Theddlethorpe Facility will have been fully remediated, as the land is set to be remediated by the current site landowners, and mitigation put in place to avoid disturbing remedial works. Additionally, if remedial works are required at the proposed Immingham Facility, it has been assumed that remediation will have occurred prior to construction of the Proposed Development as part of other works the current site landowner is undertaking.</p>
1.10.20	Applicant	<p><b>Secured mitigation</b></p> <p>Could it be signposted by the Applicant where the commitment not to drill more than 10m below ground level in Source Protection Zone 1 [APP-051, Table 9-18] is secured?</p>	<p>The section referred to states the following:</p> <p><i>“Additionally, based on information gathered from the hydrogeological risk assessment, it is advised not to drill any deeper than 10m bgl within the SPZ 1 where chalk is anticipated to come in at ~15m bgl to allow for sufficient thickness of glacial till to protect the chalk.”</i></p> <p>The FEED team is aware of this advice not to drill any deeper than 10m or within 5m of the chalk. The design of this HDD is currently being undertaken seeking to find a suitable solution.</p> <p>Consideration will be given to limiting this depth to no more than 10 metres where the underlying chalk layer is closer to the surface. Where this is not possible, additional mitigation and discussions with the EA will be required. Current existing borehole data in the area indicates that chalk bedrock level is 20m depth (chalk bearings are encountered above this level), which will be confirmed once the boreholes for the project are completed and addressed accordingly during the FEED design.</p>
1.10.21	Applicant	<p><b>Climate change resilience</b></p> <p>The impact of climate change on groundwater flooding is briefly considered in paragraphs 5.2.7 and 5.2.8 [APP-101]. It is not established if this would alter the level of flood risk, however, paragraph 5.2.8 states that <i>“any below ground elements associated with the Proposed Development should be designed in such a way as to withstand any upward hydraulic pressures in the event that groundwater levels rise as a result of climate change”</i>. The FRA does</p>	<p>1) Climate change predictions are for wetter winters and drier summers, however the overall effect on groundwater levels is currently not certain.</p> <p>2) Buoyancy calculations will be conducted as part of the FEED design and where required appropriate mitigation will be implemented, which may include deeper burial or screw anchors.</p>



ExA-Q.1.10	Question to	Question	Applicant response
		<p>not set out how this design will be secured. The Applicant is requested to provide additional information on this matter in relation to:</p> <p>1) How may climate change impacts affect the groundwater levels along the Proposed Development?</p> <p>2) Where this is not known or cannot be predicted, how the pipeline can be designed to withstand upwards hydraulic pressure?</p> <p>3) How the design of the pipeline to withstand upwards hydraulic pressure is secured within the DCO?</p>	<p>3) The process outlined in point 2 is a standard aspect of pipeline design and is therefore considered an inherent part of the Proposed Development. It is not therefore considered necessary to secure these measures in the DCO.</p>
1.10.22	Applicant	<p><b>Missing annexes</b></p> <p>The Drainage Strategy [APP-099] refers to a number of Annexes but these do not appear to have been included. Can the Applicant provide these annexes to the Examination?</p>	<p>It was noted that the Drainage Strategy [APP-099] annexes were not included within the DCO documents. These have subsequently been provided to the Examining Authority and are presented in additional submission [AS-024].</p>
<b>Rivers and watercourses</b>			
1.10.23	Applicant	<p><b>Chalk stream impacts</b></p> <p>ES Chapter 11 [APP-053] considers a number of impacts on the water environment in paragraph 11.7.1. However, it is not clear which of these impacts are specific to chalk streams. Explain with reasons.</p>	<p>The chalk streams considered in this statement are detailed in section 11.5.60 of ES Chapter 11: Water Environment [APP-053]. These are:</p> <ul style="list-style-type: none"> <li>• Skitter Beck / East Halton Beck;</li> <li>• North Beck Drain;</li> <li>• Laceby Beck;</li> <li>• Waithe Beck;</li> <li>• Long Eau; and</li> <li>• Great Eau.</li> </ul> <p>As particularly sensitive receptors, these have been given an importance of 'Very High' and as such a key principle that has been set out is that chalk streams are to be trenchless for the pipeline crossing and either not to be crossed by access roads or will be crossed by open span bailey bridges (please see Table 11-22 under 'Construction, General').</p> <p>Within the table of impacts (Table 11-23) [APP-053], these waterbodies, potential impacts and mitigation (such as the use of bailey bridges, HDD and Auger-bore crossings) have been listed out individually:</p> <ul style="list-style-type: none"> <li>• Skitter Beck / East Halton Beck – Section 1 (Page 11-121);</li> <li>• North Beck Drain – Section 2 (Page 11-126);</li> <li>• Laceby Beck – Section 3 (Page 11-133);</li> <li>• Waithe Beck – Section 3 (Page 11-134);</li> <li>• Long Eau – 5 (Page 11-151); and</li> <li>• Great Eau – Section 5 (Page 11-152).</li> </ul>

ExA-Q.1.10	Question to	Question	Applicant response																												
1.10.24	Applicant Environment Agency	<p><b>Chalk streams and mitigation</b></p> <p>The Applicant proposes using clay plugs and flume pipes to ensure water management within watercourses [APP-053, Paragraphs 11.7.23 and 11.7.24]. Are these suitable measures for chalk streams and, if not, what would be the suitable alternatives?</p>	<p>The Applicant does propose to use clay plugs and flume pipes for some crossings, however not for chalk streams, as noted in ES Volume IV Appendix 3.2 Crossing Schedule [APP-069]. It is proposed that the methodology for crossing chalk streams with the pipeline are non-intrusive (HDD or Auger-bore), and that access roads either avoid crossing the watercourses or open-span bailey bridges are used.</p> <p>The chalk streams identified in ES Chapter 11: Water Environment [APP-053] are shown in the below table alongside the proposed crossing methods from [APP-069].</p> <table border="1"> <thead> <tr> <th>Chalk streams within DCO</th> <th>Crossing schedule ID</th> <th>Pipeline crossing method</th> <th>Access road crossing method</th> </tr> </thead> <tbody> <tr> <td>Skitter Beck / East Halton Beck</td> <td>N/a not crossed</td> <td>N/a</td> <td>N/a</td> </tr> <tr> <td>North Beck Drain</td> <td>RVX001AP</td> <td>HDD (non-intrusive)</td> <td>No access crossing</td> </tr> <tr> <td>Lacey Beck / River Freshney / Welbeck Spring</td> <td>RVX001BP</td> <td>Auger bore (non-intrusive)</td> <td>Bailey Bridge</td> </tr> <tr> <td>Waithe Beck</td> <td>RVX001CP &amp; RVX001DP</td> <td>Auger bore (non-intrusive)</td> <td>Bailey Bridge</td> </tr> <tr> <td>Long Eau (classified as chalk stream upstream of the study area)</td> <td>RVX002P</td> <td>Auger bore (non-intrusive)</td> <td>No access crossing</td> </tr> <tr> <td>Great Eau (classified as chalk stream upstream of the study area)</td> <td>RVX007P</td> <td>HDD (non-intrusive)</td> <td>No access crossing</td> </tr> </tbody> </table> <p>ES Chapter 11 Table 11-22 (Embedded and standard mitigation) [APP-053] includes the following embedded mitigation:</p> <p><i>“Typically, crossings of main rivers/ditches, canals, and sensitive water features, are installed by trenchless methods. However, the majority of small watercourses, drains and ditches will be crossed using open-cut methods. The crossing schedule is provided in ES Volume IV: Appendix 3.2 (Application Document 6.4.3.2)). The crossing schedule has been developed iteratively as the design has progressed and with consultation with key stakeholders (see Table 11-3 to Table 11-5 for details of consultation). The resulting key principle is that all WFD main channels, <b>chalk streams</b> and Main Rivers are to be <b>trenchless for the pipeline crossing</b>, and are either not crossed by the access road or will be crossed by open span bailey bridges.”</i></p> <p>As such, the Applicant has not proposed the use of clay plugs and flume pipes within chalk streams.</p>	Chalk streams within DCO	Crossing schedule ID	Pipeline crossing method	Access road crossing method	Skitter Beck / East Halton Beck	N/a not crossed	N/a	N/a	North Beck Drain	RVX001AP	HDD (non-intrusive)	No access crossing	Lacey Beck / River Freshney / Welbeck Spring	RVX001BP	Auger bore (non-intrusive)	Bailey Bridge	Waithe Beck	RVX001CP & RVX001DP	Auger bore (non-intrusive)	Bailey Bridge	Long Eau (classified as chalk stream upstream of the study area)	RVX002P	Auger bore (non-intrusive)	No access crossing	Great Eau (classified as chalk stream upstream of the study area)	RVX007P	HDD (non-intrusive)	No access crossing
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ExA-Q.1.10	Question to	Question	Applicant response
1.10.25	Applicant	<p><b>Laceby Beck</b></p> <p>Provide the rationale, from the water environment perspective, that informed the positioning of the central construction compound within 150 metres of this identified water feature and why other sites, with a more distant relationship to the watercourse, were discounted.</p>	<p>The response to WQ1.3.8 provides more information about the siting of construction compounds. There are many factors that are taken into consideration in identifying options and selecting a preferred option including proximity to the construction site and road network, and avoiding potential impacts on communities, existing utilities, and protected habitats.</p> <p>The two main options for the central compound were the disused Holton le Clay airfield and the preferred site adjacent to the A18.</p> <p>Although the Holton le Clay site had been used before as a compound for the Hornsea project, the higher level of traffic associated with the Proposed Development was a concern, given the proximity of the site to the community of Holton le Clay, and the potential noise relating to decelerating and accelerating traffic entering and leaving the compound. In addition, given its distance from the areas of pipeline construction, there would have been a need for a large number of pipe deliveries through Waltham, New Waltham and Barnoldby le Beck. The preferred location avoided these issues, allowing the B1219 to be avoided.</p> <p>The initial area identified was closer to the spring, however as part of the design change process it was agreed that it could be pulled back further which, coupled with proposed mitigation measures, was considered sufficient to avoid any potential impacts on the spring. The Central compound is principally an area to store sections of pipe. The compound would not include workshops or repair shops etc. Welfare facilities would be located at the compound, but would be located well away from the northern edge of the compound as indicated in Figure 3-32 in the project description [APP-045].</p>
1.10.26	Applicant	<p><b>Bridges and banks</b></p> <p>It is stated that locations should be avoided where a temporary bridge would put pressure on the banks of watercourses causing spoil disturbance [APP-053, Paragraph 11.7.27].</p> <p>1) Are these locations known at this time and, if so, can they be specified in the relevant controlling management plans?</p> <p>2) How would such locations be determined and when?</p> <p>3) What assurance can be given that a temporary bridge would not be erected and where could this be monitored or enforced?</p>	<p>1) The currently proposed locations for temporary bridges are identified in the crossing schedule [APP-069]. These locations have been reviewed and have initially assessed to be suitable. Further assessment of these locations will be undertaken during the FEED process to confirm their suitability for temporary bridge installation in line with [APP-053]. Paragraph 11.7.27. However, the inclusion of 100m limit of deviation provides additional flexibility to microsite the bridge to avoid meanders etc.</p> <p>2) The design and location of temporary bridges will be optimised to ensure watercourse banks are protected, mitigations such as increasing the set back of bridge supports away from the banks may be employed.</p> <p>3). As it is considered that all temporary bridge crossing locations can be designed to ensure there is no pressure on banks, or risks of spoil disturbance, it is not considered that any of the currently proposed locations would need to be avoided and monitored as such.</p>
1.10.27	Applicant Environment Agency	<p><b>Cumulative construction impacts</b></p> <p>Table 11-23 [APP-053] sets out the construction impacts on watercourses. It is noted there are multiple instances of 'minor adverse' effects across the Proposed Development.</p> <p>1) It occurs to the ExA that the cumulative number of minor adverse effects may lead to major adverse effect on watercourses across the whole project. Does the Applicant have any response to this probability?</p>	<p>1) The minor adverse effects identified would generally be localised effects that would be treated at source through best practice measures, embedded and additional mitigation, as described in ES Chapter 11: Water Environment [APP-053]. As such it is not considered likely that multiple minor effects on spatially separated watercourses would combine to create an effect of greater significance. This could occur if there were longer distance downstream effects, with impacts becoming additive, but this is not the case.</p> <p>Considering multiple effect sources, such as cumulative impacts of haul roads and crossings, on the surface water, it is not anticipated that these would result in moderate or major intra project cumulative effects. Pollution prevention measures are applied at source and if residual effects</p>

ExA-Q.1.10	Question to	Question	Applicant response
		<p>2) If there is potential, as suggested in ES Chapter 12 [APP-054], for multiple construction crews to be working on a project at the same time, has the same assumption been applied in respect of the water environment?</p> <p>3) If the answer to 2 is yes, are there instances where a single watercourse could be affected at the same time in separate locations, does combining the predicted minor adverse effects into a major adverse effect?</p>	<p>are realised these are likely to be localised. Monitoring of all watercourses will be undertaken to ensure that cumulative effects do not occur through construction, as secured through [APP-068] (G5, G16, G18) and [APP-102].</p> <p>2) Each construction crew e.g., setup crew, cold bending crew, welding crew) would have a specific task to undertake but not all these tasks are likely to impact surface water features. For this reason, the impacts are looked at not by individual crews, but through those activities proposed that have the potential to impact surface waters, for example use of haul roads and laydown areas, bailey bridge crossings etc.</p> <p>3) It is possible that activities with the potential to affect the water environment could be being undertaken on multiple locations of the same receptor. The Applicant has considered these cumulative effects of multiple crossings within the main part of the impact assessment. Where there are multiple crossings of a waterbody, the impacts have been assumed to occur concurrently to apply a precautionary approach, as included within Table 11-23 [APP-053]. Following embedded and additional mitigation, all effects are considered not significant (minor or less).</p> <p>For example, Table 11-23 for North Beck Drain, the impacts associated with multiple crossings of tributaries of the watercourses has been considered, and within the assessment applying the precautionary approach these have been assumed to be occurring simultaneously, resulting in a potential moderate adverse impact. Due to this, additional mitigation has been included and the residual effects are considered to be negligible to minor. For less sensitive waterbodies (i.e. Mawnbridge Drain), all crossings have also been considered simultaneously and the effects are identified as negligible.</p> <p>In practice, it is unlikely that crossings would occur simultaneously given the linear nature of the route, however as stated, a precautionary approach has been applied.</p>
1.10.28	Applicant	<p><b>Watercourse Bylaws</b></p> <p>Please provide details on the interaction between the proposed development and the Lindsey Marsh Drainage Board watercourse bylaws. Are any changes necessary to the submitted application?</p>	<p>The Applicant is aware of the applicable byelaws and is currently in discussion with Lindsey Marsh Drainage Board regarding the most suitable method for crossing watercourses that are managed by them. Article 36 of the Draft DCO [AS-040] amongst other things seeks to disapply drainage board byelaws, which would require consent of the relevant drainage board. The Applicant is engaging with the drainage boards on protective provisions that would allow them to agree to the inclusion of this provision.</p> <p>At the conclusion of discussions any required updates to documentation shall be identified and submitted.</p>
<b>Control of pollution and contaminants</b>			
1.10.29	Environment Agency	<p><b>Standard mitigation</b></p> <p>The Applicant has referred to normal construction practices being used within the Proposed Development and this routine, industry standard mitigation would suffice [APP-053, Paragraph 11.6.2]. Are the EA content that:</p> <p>1) this is indeed sufficient mitigation;</p>	



ExA-Q.1.10	Question to	Question	Applicant response
		<p>2) whether the controls proposed are comprehensive and can the EA confirm if it has any confidence that the measures will be effectively implemented; and</p> <p>3) there are no other mitigation measures (including area-specific mitigations) that are required in this instance.</p>	
1.10.30	Applicant	<p><b>Bentonite</b></p> <p>To provide reassurance to the ExA and IPs, please submit a bentonite breakout plan (or outline of such a plan) to the Examination demonstrating the due diligence and measures the Applicant would put in place to protect the integrity of both groundwater and surface water features.</p>	<p>All HDD crossings are being designed as part of the FEED process. These designs will be such that the risk of bentonite break out will be very low.</p> <p>A bentonite breakout plan will be developed by the HDD contractor as part of the construction works but prior to any HDD activities taking place. A draft of this plan will be submitted at Deadline 3. This measure E34 has been added to Revision A of the Draft CEMP submitted at Deadline 1 (<b>document reference 6.4.3.1</b>).</p> <p>The following provides a typical outline on what such a plan would include:</p> <ul style="list-style-type: none"> <li>• A description of the HDD Process including the need for bentonite to be used;</li> <li>• An assessment of the risk of breakout;</li> <li>• Breakout mitigation and management measures to further reduce the risk of breakout as well as the consequences should a breakout occur;</li> <li>• Proposals for managing the cleanup of any bentonite breakout, should it occur; and</li> <li>• Applicable Data Sheets.</li> </ul>

**Table 11: Q.1.11 Geology and Land Use**

ExA-Q.1.11	Question to	Question	Applicant response
<b>Farming Operations</b>			
1.11.1	Applicant	<p><b>Severance and breaches</b></p> <p>1) Confirm whether the Proposed Development would result in any severance issues for farms and, if so, how such severance issues are to be addressed/ mitigated?</p> <p>2) Explain if/ how short and long-term breaches of Agri-Environment schemes potentially caused by the Proposed Development, would be dealt with and who would take responsibility for dealing with any breaches – the Applicant or the signatory of the scheme? If it is the signatory, is the Applicant proposing to provide any support/ advice?</p> <p>3) Signpost where in the application documents this information can be found if it has already been provided.</p>	<p>1) It is not anticipated that areas of farmland will be permanently severed as a result of Proposed Development, as once the pipeline is installed, land used for agriculture can be returned to its previous use. In the limited areas where there is above ground infrastructure (i.e. at the Block Valve Stations, Immingham and Theddlethorpe Facilities, the scheme is designed in such a way as to minimise and mitigate any potential impact on future farming operations. In the event that any areas of farmland are severed as a result of the Proposed Development, either temporarily during construction or as a result of permanent development, the affected landowner will be compensated in accordance with Compensation Code.</p> <p>2) The Applicant is aware, through negotiations and discussions, that there are potential areas that may result in a breach of an Agri-Environment Scheme. The Applicant has offered to compensate landowners/occupiers where this is the case as part of any voluntary agreement. Where land is acquired compulsorily, landowners/occupiers will be entitled to compensation for losses and reasonable professional fees incurred as a result of the Proposed Development.</p> <p>3) Please refer to responses 1) and 2) above.</p>
1.11.2	Applicant	<p><b>Agricultural business activity</b></p> <p>A number of landowners have cited interference with agricultural business activity and other business activities with concerns to how compensation measures would be dealt with. Whilst the level of any potential compensation is not a matter for the Examination to determine, the Applicant is requested by the ExA to further clarify/ explain how it intends to deal with compensation issues for the benefit of all APs.</p>	<p>The commercial arrangements offered provide for advance payment of crop loss and disturbance compensation to be paid by the Applicant to affected parties and for those parties to claim compensation throughout the construction period and beyond.</p> <p>Access to any retained severed parcels will be agreed prior to construction starting which will include agreeing areas that are to remain uncultivated due to them being difficult and / or uneconomic to farm during the construction period – compensation will be paid in relation to these areas also.</p> <p>There is a process for claiming compensation in accordance with the statutory Compensation Code if there are areas of the land adversely impacted by the Proposed Development and that are acquired compulsorily.</p> <p>The Affected Parties and the Applicant (and their respective Agents) will act reasonably to progress and agree heads of claim in accordance with the Compensation Code. The principles of fairness and equivalence will apply in relation to any discretionary payments to be made by the Applicant to Affected Parties that fall out with the Compensation Code.</p> <p>An advance payment calculated using the relevant edition of the Agricultural Budgeting and Costings Book will be made to an Affected Party within 30 days of the estimated loss being agreed between the Applicant and the Affected Party (or their) agents, with the right reserved to submit interim claims through the construction period.</p> <p>The advance payment of compensation for disturbance and crop loss may include such elements of severance and/or injurious affection relating to the Affected Parties' retained land.</p>
1.11.3	Applicant	<p><b>Pipeline specifics on agricultural land</b></p> <p>A significant number of the RRs (around 46 out of 121) are in a similar format, raised on behalf of landowners who are existing farmers. To</p>	<p>The Applicant has shared information on the pipeline construction methodology and burial depth throughout the consultation process and as part of its application for development consent.</p>

ExA-Q.1.11	Question to	Question	Applicant response
		<p>quote from one example [RR-004], there has been a <i>“Failure to agree a method statement for the pipeline construction and failure to provide clarity regarding construction depth of the pipeline and assurances that the land can be farmed going forward.”</i></p> <p>What reassurance can the Applicant give concerning future farming operations?</p>	<p>As set out in ES Chapter 3: Description of the Proposed Development [APP-045] (see para 3.7.32) once the pipeline is installed, normal agricultural practices will be able to resume above the pipeline. Further, sections 3.7.10 and 3.12 of Chapter 3 sets out the approach to construction in more detail and further details on Soil management are provided within ES Volume IV Appendix 10-1: Outline Soil Management Plan [APP-096].</p> <p>Details of the burial depth of the pipeline have also been shared with the affected parties' Agent and reference has been made to this in the proposed Heads of Terms, for which the Applicant is progressing with an aim to reach agreement.</p>
1.11.4	Applicant Lincolnshire County Council	<p><b>Depth of burial</b></p> <p>In their scoping report (referred to in Table 10-3 of the ES Chapter 10 Agriculture and Soils document [APP-052]), Lincolnshire County Council say that <i>“any impact on agricultural land will be temporary in nature and important that there is no long-standing issues to agricultural land - thus supportive of the proposed approach.”</i></p> <p>However, if the depth of the pipe is 0.7 metres (or possibly less in view of the Limits of Deviation in Article 6 of the DCO) this will have a longer-term impact. What is the justification for this?</p>	<p>As set out in the response to WQ1.7.10, the main constraints that could result in the pipeline being deviated from the depth of 1.2m are geological features and existing services. Such constraints will only be identified as part of the pre-commencement surveys undertaken by the Applicant.</p> <p>The Applicant fully expects that the target depth will be achieved along the vast majority of the pipeline route. Even if that depth is not achieved at certain locations, it does not mean that agricultural activities cannot recommence. Most agricultural activities, including ploughing, would not go below 0.7m from ground level. If, due to identified constraints, the pipeline was installed at the upper limit of 0.7 metres (or shallower with the consent of the Secretary of State), then for safety reasons certain agricultural activities could be prevented from continuing. The Applicant would seek to minimise impacts on the landowner by:</p> <ul style="list-style-type: none"> <li>• Engaging with the landowner where the target depth cannot be achieved, with a view to reaching a mutually agreeable solution.</li> <li>• Paying additional compensation where previous agricultural activities cannot be resumed as a result of the Proposed Development.</li> </ul> <p>This is reflected in the commercial heads of terms that have been offered to all landowners.</p> <p>The Applicant considers that the inclusion of the limits of deviation as set out in the draft DCO are necessary to ensure the constructability of the Proposed Development.</p>
1.11.5	Applicant	<p><b>Access to Theddlethorpe</b></p> <p>The alternative location for the proposed TAGI (Option 2) is on agricultural land to the west of the former terminal site. This Option 2 also requires an extension to the current LOGGS 36” pipeline and a new permanent access road. Paragraph 10.4.19 of the ES Chapter 10 [APP-052] assumes that this loss will be <i>“permanent and irreversible”</i>. Can this be justified when there is an alternative available as Option 1 subject to a commercial negotiation?</p>	<p>As set out in paragraph 9.2.4 of the Statement of Reasons [AS-013], The Applicant was advised by National Gas Transmission plc (“NGT”) in the pre-application stage that NGT were exploring plans for development of the former Theddlethorpe Gas Terminal (“TGT”) site. In their relevant representation, NGT stated that the former TGT site was operational land of NGT, was earmarked for alternative purpose, and that they objected to its compulsory acquisition by the Applicant.</p> <p>The Applicant disagrees with NGT’s position, as summarised in section 10.4 of the Statement of Reasons [AS-043] and expanded on in response to WQ 1.1.8]. However, if the Secretary of State accepted NGT’s position, then the Applicant could not acquire the TGT site compulsorily.</p> <p>The Applicant is pro-actively negotiating with NGT to find a solution that would allow co-existence between the Applicant and other proposed uses for the wider TGT site (see [RR-056]). However, if a commercial agreement cannot be reached, and the Applicant could not acquire it compulsorily, then the Applicant’s position is that the land should be considered unavailable for the Proposed Development. The Applicant considers that it needs to include Option 2 to ensure the project is viable and therefore considers it appropriate and justifiable to include an alternative site option in the vicinity of the LOGGS pipeline where the Theddlethorpe Facility could be located.</p>

ExA-Q.1.11	Question to	Question	Applicant response
1.11.6	Applicant	<p><b>Farm by farm assessment</b></p> <p>In a tabular format, please list all the individual farms and smallholdings affected by the Proposed Development, the size and scale (hectares (ha)) of each of these agricultural units, then the amount of land to be taken (permanently and/ or temporarily) from these agricultural units first as an area (ha) and then as percentage (%) of the overall holding. Subsequently, indicate whether the effects on each farm are considered minor, moderate or significant.</p>	<p>The Applicant has not submitted at Deadline 1 the information that is requested in WQ 1.11.6. The information that is requested is not held by the Applicant, as it was not necessary for the purpose of undertaking the assessment of EIA impacts on agricultural receptors.</p> <p>The Applicant has undertaken a detailed assessment of effects on agricultural receptors that might be impacted by the Proposed Development, which are reported on within Environmental Statement Chapter 10: Agriculture and Soils [APP-052]. The assessment of potential effects was undertaken in accordance with relevant guidance, as set out in paragraph 10.2.11.</p> <p>The Applicant notes that the potential for operational effects on agriculture and soils was scoped out of the assessment on the basis that significant effects were unlikely due to the nature of the development. This was agreed in the Scoping Opinion [APP-075] adopted by the Planning Inspectorate on behalf of the Secretary of State.</p> <p>The assessment of temporary and permanent impacts is set out in section 10.7 of ES Chapter 10: Agriculture and Soils [APP-052]. This does not consider individual farm businesses, however, due to the nature of the Proposed Development, the Applicant does not consider that any of the potential effects would have an impact on farm viability or have a significant effect. As set out in ES Chapter 3: Description of the Proposed Development [APP-045], paragraph 13.12.15, a typical 1km section of open cut pipeline installation would require the Applicant to temporarily possess land for approximately seven months. The land would be reinstated by the end of that period and can be returned to agricultural use. Where the Applicant exercised its powers of temporary possession under the draft DCO, the landowner and/or occupier would be entitled to compensation. This would include compensation for impacts on their farm business during the period that they could not farm the occupied area. Where permanent impacts occur due (i.e. where above ground infrastructure is built on agricultural land), the landowner/occupier will be entitled to compensation for any land taken by the Applicant and for any impacts on their wider business.</p> <p>On this basis, the Applicant does not consider it necessary, and does not have the information available, to provide the information requested in WQ1.11.6.</p>
<b>Other land use matters</b>			
1.11.7	Natural England	<p><b>Soil Management Plan</b></p> <p>In their submission [RR-073], NE confirm that they are advising the Applicant on soil resources. NE also said they would be reviewing the Soil Management Plan [APP-096]. Are there any further comments on this?</p>	
1.11.8	Applicant	<p><b>National Farmers Union (NFU)</b></p> <p>The ExA note that the NFU has not registered as an Interested Party to this Examination. Has the Applicant had any engagement with the NFU in the pre-application or pre-examination phase of this project and, if so, what feedback has been received to date?</p>	<p>The Applicant did not receive feedback from the NFU during either the pre-application or pre-examination phase.</p> <p>With regards to farming activities, these have been considered as part of the routeing design and pre-application engagement with landowners. The Applicant will continue conversations with relevant landowners when planning construction to take account of farming activities and minimise any disruption as far as possible.</p>



**Table 12: Q.1.12 Habitats Regulation Assessment**

ExA-Q.1.12	Question to	Question	Applicant response
<b>Effect of the Proposed Development on its own and In-combination with Other Plans and Projects</b>			
1.12.1	Applicant Natural England	<b>NE's position</b> At Deadline 1, the Applicant is requested to provide its responses to the RR received. Notwithstanding this, the ExA request that the Applicant responds to [RR-073] with direct reference to each of the tabulated issues (NE9, NE10 for example) labelled by NE. It may be better to do this in tabular format similar to NE's presentation to ensure each point has been suitably addressed (Green marked points can be excluded).	Please see the Applicant's response to Natural England's Relevant Representation [RR-073] submitted to the ExA at Deadline 1, which has been prepared in a tabulated format and addresses each point in turn.
1.12.2	Applicant	<b>The Northern Compound</b> The ExA notes, like NE, that Figure 3 of Appendix 6-7 [APP-083] shows no bird surveys have been undertaken at the Northern Compound site despite this being within 10km of the Humber Estuary Special Protection Area (SPA). Provide justification as to why this has not been done and provide information to demonstrate whether or not the land for the compound constitutes functionally linked land.	The Northern Compound will be located within an arable field immediately south of the A160. It is also relevant to confirm that this site has previously been used as a construction compound for other projects which have now been completed. The land at the Northern Compound was appraised for its suitability to support breeding and wintering birds during a scoping visit on 4 July 2022 and again on 17 August 2022, and due to the proximity to a major road, was considered unlikely to be functionally linked. This will be confirmed within an updated HRA (Revision B) which will be provided to the ExA at Deadline 2.
1.12.3	Applicant	<b>Pathway for Likely Significant Effects (Stage 1 screening)</b> In respect of water quality and the water environment, particularly where HDD and auger-bores are proposed, there does not appear to be any consideration of the potential for bentonite breakout. Could the Applicant explain whether or not the potential for this should be considered a pathway and, subsequently, whether there would be any likely significant effects arising?	All water quality impacts have been considered in paragraphs 6.2.59 to 6.2.71 of the likely significant effects section Report to Inform the Habitats Regulations Assessment [AS-026]. The HDD activities will be planned and executed so as to minimise any risks to the environment. The Applicant does not consider that it needs to be discussed in the HRA as a separate impact pathway from other water quality impacts.
1.12.4	Applicant	<b>Pathway for Likely Significant Effects (Stage 1 screening)</b> Venting, and the noise therefrom, does not appear as a potential disturbance pathway for birds/ wildlife on functionally linked land [AS-026, Paragraph 6.3.1]. The venting apparatus to be used across the Proposed Development, and the visual intrusion therefrom, do not appear to have been considered in the Habitats Regulation Assessment Report (HRAR). Can it be explained why this is the case given the potential for significant noise and visual disturbance effects, alongside atmospheric pollution, to occur?	Aspects of the Proposed Development that could result in noise and visual disturbance during operation have been considered within section 6.3 of the report to inform HRA [AS-026]. Venting systems are described in Section 3.9 of Chapter 3: Description of the Proposed Development [APP-045]. Maintenance venting will be undertaken approximately every two years at the Immingham and Theddlethorpe Facilities. The venting of CO <sub>2</sub> will be undertaken at a rate whereby the noise at the nearest Noise Sensitive Receptor will be no greater than 10 dB above daytime background levels. The potential for noise and visual disturbance of birds from venting systems will be confirmed within an updated HRA (Revision B) submitted to the ExA at Deadline 2.
1.12.5	Applicant Natural England	<b>Pathway for Likely Significant Effects (Stage 1 screening)</b> The HRAR [AS-026, Paragraph 6.2.64] suggests that pollution in watercourses has to travel a long way to the Harbour Estuary and thus will be strongly diluted to a point there will not be a likely significant effect. However, this does not consider a potential pathway of effect of water pollutants on functionally linked land or upon inland pools/ ponds used by SPA-component bird species. For example, if a pollutant entered the water and travelled downstream to functionally linked land its concentration would be higher. Can it be explained whether or not	It should be noted that dilution is not the sole basis for concluding no likely significant effect. Rather, paragraph 6.2.65 of the HRA [AS-026] notes that ' <i>Changes in water quality have been considered during screening as the Environmental Damage (Prevention and Remediation) (England) Regulations 2015 and the Environmental Permitting (England and Wales) Regulations 2016 make it an offence to pollute watercourses, irrespective of whether they are designated as European designated sites or connect to designated sites. With embedded mitigation, impacts from run-off are predicted to be short term, intermittent and spatially local</i> '.  Although only watercourses have been specifically mentioned in that paragraph, all environments would be protected from the measures required by law to protect water quality. For clarity, paragraph 4 of the Environmental Damage Regulations 2015 states that the

ExA-Q.1.12	Question to	Question	Applicant response
		this is a pathway of concern and why this has not featured in the HRAR?	regulations cover environmental damage to (a) a protected species or natural habitat, or a site of special scientific interest; (b) surface water or groundwater; (c) marine waters; or (d) land.
1.12.6	Applicant	<b>Viking Fields Working Restrictions</b> The Applicant has set out restrictions on when certain works would or could be undertaken [AS-026, Paragraph 7.3.13]. Can the Applicant set out where this mitigation is secured?	This measure has been added into an updated version (Revision A) of the Draft CEMP ( <b>document reference 6.4.3.1</b> ) which has been submitted to the ExA at Deadline 1.
1.12.7	Natural England	<b>Natterjack Toads</b> The Applicant has assessed the only pathway for a likely significant effect on natterjack toads is for encroachment of machinery into the living habitat, proposing mitigations to avoid such an occurrence happening [AS-026, Paragraphs 6.2.93, 7.3.39]. Are NE content that the works to the Dune Valve Station (and access thereto, including use of a crane [AS-026, Paragraph 6.2.130]) would not cause other pathways of effect to occur (for example from noise and visual disturbance, vibration or dust)?	
1.12.8	Applicant Natural England	<b>Grey seals</b> No Adverse Effects on Integrity (AEol) is predicted in respect of the grey seal feature of the Humber Estuary Special Area of Conservation (SAC) [AS-026, Paragraph 6.2.91]. This is due to the breeding site being 13.25km north of the Proposed Development. For the purposes of clarity, are there no recorded seal haul-out sites (or other records of seal foraging activity) in proximity to the Saltfleetby-Theddlethorpe Dunes and Gibraltar Point SAC?	Impacts most likely to result in an adverse effect on the integrity of the seal population of the SAC relate to those which would disrupt the breeding activities of the grey seals, hence why the HRA Report [ <b>AS-026</b> ] focussed on that impact pathway. The scheme does not interact with any potential haul out sites or foraging areas for seals being over 1.5km from the Humber Estuary SAC at the northern end of the Proposed Development. While the southern end of the Proposed Development is much closer, the seals do not use the sand dunes of Saltfleetby-Theddlethorpe Dunes & Gibraltar Point SAC and the beach is too distant for any effect to arise if any seals did use that location.
1.12.9	Natural England	<b>Noise and disturbance mitigation</b> Does NE consider that the simple erection of close-boarded fencing would sufficiently reduce noise and disturbance to a level whereby an AEol can be ruled out [AS-026, Paragraphs 7.3.12, 7.3.19 et al]?	
1.12.10	Natural England	<b>Pink-footed geese mitigation</b> Given the abundance of pink-footed geese in the locality [AS-026], are the mitigations proposed by the Applicant sufficient to rule out an AEol? If not, what measures should be adopted?	
1.12.11	Applicant Natural England	<b>Red-throated diver assessment and mitigation</b> The ExA notes from NE's relevant representation [RR-073] that there are no concerns regarding the Greater Wash SPA. Nonetheless, the ExA notes that the Applicant states red-throated diver from the Greater Wash SPA, whilst not present in the Order Limits, may fly over the Proposed Development [AS-026, Paragraph 6.2.147]. The species is known to demonstrate high levels of avoidance and subsequent displacement effects may occur.	Displacement of red-throated diver is only considered a concern from structures or ships in the marine environment in which they forage and roost outside of the breeding season. There is no evidence of red-throated diver being displaced due to structures on land or being displaced while on the wing over land. There is therefore no reason to conclude that the vent stack at the Theddlethorpe Facility would be disruptive to red-throated diver.

ExA-Q.1.12	Question to	Question	Applicant response
		<p>1) Why has displacement not been considered as a potential pathway of effect, particularly given the 25m stack at Theddlethorpe?</p> <p>2) How much more of a likely significant effect would occur if the 'emergency' 50m stack were to be erected?</p>	
1.12.12	Applicant	<p><b>Drainage and water management</b></p> <p>Having reviewed the conclusions [AS-026, Paragraph 7.3.35], the ExA request, in order to ensure an AEol can indeed be ruled out, outline versions of the drainage strategy and water management plan be prepared and submitted to the Examination. Confirm when this will be done.</p>	<p>The Drainage Strategy for the Proposed Development is provided as ES Volume IV Appendix 11-3: Drainage Strategy [APP-099].</p> <p>The Outline Surface Water Management Plan is provided as ES Volume IV Appendix 11-6: Outline Surface Water Management Plan [APP-102].</p>
1.12.13	Natural England	<p><b>Position Statement</b></p> <p>The content of [RR-073] is fully acknowledged and clear. However, for the purposes of full disclosure, please can the following questions be briefly responded to:</p> <p>1) Can NE confirm whether or not the HRA screening matrices [AS-026, Appendices G and H] are complete and acceptable? If not, why not?</p> <p>2) Are NE satisfied that the amount of survey data used to inform the HRA and Appropriate Assessment is both sufficient and robust to reach reasoned scientific judgements? If there are perceived deficiencies, explain what these are and the concerns that emerge from this.</p> <p>3) Can NE confirm whether or not it agrees with the Applicant's conclusions regarding potential for likely significant effects? It may be beneficial to use the table [AS-026, Table 7-1] and add a column to confirm NE's agreement or disagreement. If there is disagreement, please set out the reasons.</p> <p>4) Can NE confirm its position, in tabular format, at this stage whether an AEol can be ruled out in respect of each designated European site. This table may be updated during the Examination as, when and if NE's position changes. If the Applicant's AEol conclusions are disputed, please explain why in separate free-flowing text.</p>	
1.12.14	Applicant	<p><b>Confirmation of wording</b></p> <p>To aid understanding, please explain the use of the word 'within' [AS-026, Paragraph 6.2.11]. Does that mean that land adjacent and contiguous with the Order Limits has not been considered?</p>	<p>Paragraph 6.2.11 of the HRA [AS-026] notes the important point that no evidence of breeding bittern, marsh harrier or little tern were recorded within either of the options proposed for the Theddlethorpe Facility. However, the potential for bittern, marsh harrier and little tern to use land adjacent to and contiguous with the Order Limits was considered. Marsh harrier was recorded on one occasion flying through the wider survey area but was otherwise absent from the baseline surveys. It is known to occur at Great Carlton Wetlands over 1km west of the Proposed Development.</p> <p>The breeding sites and occurrence of bittern and little tern are restricted largely to specific locations well outside of the Order Limits, and neither of these species occurred within the baseline supporting the assessment, other than as qualifying species of designated sites that</p>



ExA-Q.1.12	Question to	Question	Applicant response
			<p>are otherwise unaffected by the Proposed Development, or as occasional records within the wider Study Area.</p> <p>In summary, habitats adjacent to and contiguous with the Order Limits were carefully considered within the assessment.</p>
1.12.15	Applicant Natural England	<p><b>Marine Environment</b></p> <p>NE recommends the terrestrial and marine aspects are considered at a holistic level because the Proposed Development is intrinsically linked to an offshore project [RR-073].</p> <p>1) What implications does / would this have on the HRA carried out to date?</p> <p>2) How should the competent authority approach or consider such matters when undertaking the Appropriate Assessment?</p>	<p>As the onshore scheme does not include any works in the intertidal zone or wider marine environment there is no potential for marine-based receptors to be affected that could also be affected by the offshore works which are being consented separately. The nearest offshore works will be 118km offshore.</p> <p>It is the view of the project ornithologist that there is no potential that bird species/populations impacted by the onshore scheme could also be impacted by works 118km offshore.</p> <p>As such it is the Applicant's view that there are no implications for the HRA carried out to date and that it is not necessary for the competent authority to consider such matters when undertaking the Appropriate Assessment.</p>
1.12.16	Applicant	<p><b>Humber Estuary RAMSAR</b></p> <p>The HRAR [AS-026, paragraph 4.2.25] has a heading of RAMSAR criterion 8, however the criterion is not listed, as this instead refers to a population listed under Criterion 6. Can the Applicant provide a corrected version of the HRA with the information related to criterion 6 and 8.</p>	<p>Paragraph 4.2.25 [AS-026] will be updated to refer to the correct criterion 8 ('<i>The Humber Estuary acts as an important migration route for both river lamprey <i>Lampetra fluviatilis</i> and sea lamprey <i>Petromyzon marinus</i> between coastal waters and their spawning areas</i>'). Note that this criterion is correctly cited in Table 7-1 of [AS-026] and has been covered in the assessment. The updated version of the HRA (Revision B) will be submitted to the ExA at Deadline 2.</p>
1.12.17	Applicant	<p><b>Stage 1 Screening</b></p> <p>The HRA report [AS-026] is supported by Appendix 13.4 'HRA Noise Assessment' of the Environmental Statement (ES) which presents the methodology used to assess noise to support the HRA, although this is not referenced in the HRAR. The Applicant is requested to provide confirmation as to how the information provided within the noise assessment has been utilised within the HRAR.</p>	<p>The data generated using the methodology documented in ES Volume IV Appendix 13-4 of the ES [APP-111] resulted in the noise contour maps that are contained in that document and reproduced in Appendix E of the HRA [AS-026]. Those noise contour maps were the basis of the noise assessment in the HRA [AS-026].</p>
1.12.18	Applicant	<p><b>Screening for LSE</b></p> <p>With reference to the Matrices in Appendix G [AS-026], they do not include the pathway of changes to water quality during operation, and with the exception of the Humber Estuary SPA, do not include the pathway of noise and visual disturbance during operation which are assessed within section 6.3. For completeness, Appendix G should be updated to include this information.</p>	<p>Paragraphs 6.3.2 to 6.3.15 of the HRA [AS-026] discuss noise and visual disturbance of breeding and non-breeding birds using functionally linked land. It is confirmed that there will be no likely significant effects upon any European designated sites from noise and visual disturbance at the Immingham Facility, pipeline route and Block Valve Stations, Theddlethorpe Facility (both options) or Dune Isolation Valve. Therefore, this pathway of effect can be screened out.</p> <p>Paragraphs 6.3.16 to 6.3.18 within the Report to Inform HRA [AS-026] confirm that there will be no likely significant effects upon European Designated Sites from changes in water quality and that this pathway can be screened out.</p> <p>The matrices will be amended in the update to the HRA (Revision B) which will be submitted to the ExA at Deadline 2.</p>
1.12.19	Applicant	<p><b>Screening for LSE</b></p> <p>With reference to the matrices in Appendix G [AS-026] and assessment within section 6.3, interested parties are invited to comment on the conclusions that operational impacts from dust and particulates and</p>	<p>This appears to be directed to parties other than the Applicant.</p>



ExA-Q.1.12	Question to	Question	Applicant response
		atmospheric emissions from vehicles and plant are considered acceptable to screen out and therefore not taken forwards to stage 2.	
1.12.20	Applicant	<p><b>Screening for LSE</b></p> <p>Throughout the matrices in Appendix G [AS-026], the terms 'noise and visual' and 'noise and vibration' are presented inconsistently. Table 1, 2 and 3 (referring to SPA / RAMSAR sites) use the terms noise and visual, Table 3 (SAC) uses noise and vibration, and Table 4 (SAC) does not refer to noise, vibration or visual at all. Whilst it is noted that the sites have differing qualifying features, the Applicant is requested to provide clarity on how each site has been assessed for all LSE related to noise, vibration and visual disturbance.</p>	<p>'Noise and vibration' and 'visual disturbance' are given separate columns in Table 3 regarding Humber Estuary SAC because some interest features (notably fish) are susceptible to underwater noise/vibration but not to visual impacts. For the SPA and Ramsar site (Tables 1 and 2) 'Noise and visual' disturbance is given as a single column because for birds (the main interest of the SPA and Ramsar site) these are intertwined pathways. Vibration is not explicitly mentioned in the heading of Tables 1 and 2 because this (as distinct from noise) is more of an issue for species such as fish rather than for birds where vibration and noise are intertwined.</p> <p>The matrices will be amended in the update to the HRA (Revision B) which will be submitted at Deadline 2.</p>
1.12.21	Applicant	<p><b>Humber Estuary RAMSAR</b></p> <p>Table 2 of Appendix G [AS-026] notes that dust and particulate impacts to Lamprey are carried forwards, however neither the accompanying footnote or paragraphs 6.2.110 – 6.2.113 refer to dust and particulates, and therefore it is not clear whether this was intended to be carried forwards to stage 2. The Applicant is requested to provide clarity on this matter.</p>	<p>Paragraph 6.2.112 of the HRA [AS-026] notes that there is a potential risk of indirect impacts from surface water runoff from construction areas (i.e. fine sediments). It is considered that dust could also result in fine sediment reaching watercourses. Therefore, this paragraph and matrices will be updated in an update to the HRA (Revision B) to confirm that dust and particulates are taken forward to Appropriate Assessment. This will be submitted to the ExA at Deadline 2.</p>
1.12.22	Applicant	<p><b>Humber Estuary RAMSAR</b></p> <p>Table 7-1 and report section 7 [AS-026] indicates no LSE are predicted for Lamprey impacts during the decommissioning phase, however this is ticked as yes in Table 2 of Appendix G for the pathways of dust and particulates, water quality, noise and visual disturbance and direct injury, and taken forwards to stage 2 in Appendix H Table 7. The Applicant is requested to provide clarity on this matter.</p>	<p>Paragraph 7.1.2 of the HRA [AS-026] confirms that the base case is for the pipeline to be left in situ along its entire length. Therefore, there will be no likely significant effects upon lamprey as watercourses and surrounding habitats will remain undisturbed.</p> <p>The matrices will be amended in the update of the HRA (Revision B) to confirm this. This will be submitted to the ExA at Deadline 2.</p>
1.12.23	Applicant	<p><b>Humber Estuary RAMSAR</b></p> <p>Table 7-1 [AS-026] and paragraphs 6.2.93 – 6.2.95 considers that LSE may be present for Natterjack Toad (killing or injury) during construction and decommissioning but this is not ticked in Table 2 of Appendix G and is also not taken forwards to stage 2 in Appendix H Table 7. The Applicant is requested to provide clarity on this matter.</p>	<p>Paragraph 6.2.94 of the HRA [AS-026] confirms that localised construction work will be required to replace the Dune Valve. In the absence of mitigation, there is the potential for machinery to encroach onto adjacent habitats. Habitats immediately surrounding the Dune Valve comprise scrub and it is unlikely that natterjack toad would be present. However, based upon a precautionary approach, killing or injury of natterjack toad is taken forward to Appropriate Assessment.</p> <p>The matrices will be amended in Revision B to the HRA to confirm this. This will be submitted to the ExA at Deadline 2.</p>
1.12.24	Applicant	<p><b>Humber Estuary RAMSAR</b></p> <p>Table 2 of Appendix G [AS-026] and subsequently Table 7 of Appendix H, does not include an assessment of Black Tailed Godwit which is listed in the qualifying features (criteria 6 as detailed at paragraph 4.2.7) of the RAMSAR citation. The Applicant is requested to provide clarity on this matter.</p>	<p>The Applicant has reviewed the ornithology survey data and can confirm that noise and visual disturbance of black-tailed godwit (recorded at Rosper Road Pools) is taken forward to appropriate assessment. Since impacts on Rosper Road Pools have already been taken forward for appropriate assessment this is not considered likely to materially change findings even if/after black tailed godwit is/has been taken forward.</p> <p>The matrices will be amended in Revision B of the HRA [AS-026]. This will be submitted to the ExA at Deadline 2.</p>
1.12.25	Applicant	<p><b>Humber Estuary SAC</b></p>	<p>This appears to be addressed to parties other than the Applicant</p>

ExA-Q.1.12	Question to	Question	Applicant response
		Table 3 [AS-026] refers to “air quality” whereas the other tables differentiate between dust and particulates, and vehicle / plant emissions. Interested Parties are invited to comment on the suitability of grouping these topics together for the Humber Estuary SAC only.	
1.12.26	Applicant	<p><b>Humber Estuary SAC</b></p> <p>Table 7-1 and section 7 [AS-026] indicates no LSE are predicted for Lamprey impacts during the decommissioning phase, however this is ticked as yes in Table 3 of Appendix G for the pathways of water quality, noise and vibration disturbance and direct injury, and taken forwards to stage 2 in Appendix H Table 8. The Applicant is requested to provide clarity on this matter.</p>	<p>Paragraph 7.1.2 of the HRA [AS-026] confirms that the base case is for the pipeline to be left in situ along its entire length. Therefore, there will be no LSE upon lamprey as watercourses and surrounding habitats will remain undisturbed.</p> <p>The matrices will be amended in Revision B to the HRA to confirm this. This will be submitted to the ExA at Deadline 2.</p>
1.12.27	Applicant	<p><b>Humber Estuary SAC</b></p> <p>For the Humber Estuary SAC, Appendix H (Table 8) [AS-026] does not include an assessment of noise and vibration during decommissioning in the matrix. The Applicant is requested to provide an updated matrix with this pathway included.</p>	<p>The matrices will be amended in Revision B of the HRA [AS-026] to include noise and vibration during decommissioning. This will be submitted to the ExA at Deadline 2.</p>
1.12.28	Applicant	<p><b>Saltfleetby-Theddlethorpe Dunes and Gibraltar Point SAC</b></p> <p>Table 7-1 and section 7 [AS-026] have habitat loss during decommissioning as a potential LSE, but this is not taken forwards to the matrix in Appendix G Table 4 or Appendix H Table 9 as this only has construction noted. The Applicant is requested to provide an updated matrix with this pathway included.</p>	<p>The matrices will be amended in Revision B of the HRA [AS-026] to include habitat loss during decommissioning. This will be submitted to the ExA at Deadline 2.</p>
1.12.29	Applicant	<p><b>Overlapping designations</b></p> <p>It is noted that the Humber Estuary SPA, RAMSAR and Saltfleetby to Theddlethorpe Dunes and Gibraltar Point SAC are overlapping designations. However, the ExA have noted that there are inconsistencies in relation to potential LSE and therefore AEOI between these sites [AS-026]. The Applicant and Interested Parties are invited to provide additional information on the following:</p> <ul style="list-style-type: none"> <li>• <u>Overlapping SPA and RAMSAR comparison - Golden Plover and Redshank</u> in the Humber Estuary SPA has an identified potential LSE for noise and visual disturbance during construction and decommissioning, whereas Golden Plover and Redshank in the RAMSAR do not. The justification for this (paragraphs 6.2.97 - 6.2.105) is that this species were recorded in numbers below the 1% threshold and LSE can be screened out. Interested Parties are invited to comment on whether the application of a threshold of 1% is appropriate for this impact pathway.</li> <li>• <u>Overlapping SPA and RAMSAR comparison - Redshank</u> in the Humber Estuary SPA has an identified potential LSE due to permanent loss of FLL, whereas Redshank in the Humber</li> </ul>	<p>The Applicant considers that the approach taken in the HRA [AS-026] is appropriate.</p> <p>The Humber Estuary SPA and Ramsar and Saltfleetby to Theddlethorpe Dunes and Gibraltar Point SAC are overlapping designations; however, the boundaries differ.</p> <p>There will be no direct habitat loss within any of the European designated sites at Theddlethorpe. The onshore pipeline will connect to the existing (below ground) LOGGS pipeline west of the sand dunes at Theddlethorpe. Localised works will be required to replace the Dune Isolation Valve which is adjacent to the designated site boundaries. As the Saltfleetby to Theddlethorpe Dunes and Gibraltar Point SAC is designated for its dune habitat, the potential for habitat loss as a result of encroachment of machinery was taken forward to Appropriate Assessment. This was based upon a precautionary approach to allow mitigation to be applied, namely adjacent habitats to be fenced off during works.</p> <p>The Applicant will review the approach taken in the HRA and update (as Revision B) to provide further clarification at Deadline 2.</p>

ExA-Q.1.12	Question to	Question	Applicant response
		<p>Estuary RAMSAR does not. The justification for this (paragraph 6.2.95) indicates that no species other than Avocet were recorded in numbers above the 1% threshold. Interested Parties are invited to comment on whether the application of a threshold of 1% is appropriate for this impact pathway.</p> <ul style="list-style-type: none"> <li>• <u>Overlapping SAC and SPA/ RAMSAR comparison</u> - The Saltfleetby SAC has potential LSE from habitat loss during construction (and decommissioning), as paragraph 6.2.126 states that in the absence of mitigation, there is the potential for machinery to encroach onto adjacent habitats, which could have an effect on the qualifying habitats. This is inconsistent with the assessment in the Humber Estuary RAMSAR (paragraph 6.2.79) and Humber Estuary SPA (paragraph 6.2.3) states that that no direct habitat loss will occur as the onshore pipeline will connect to the existing (below ground) LOGGS pipeline west of the sand dunes at Theddlethorpe. The ExA requests the Applicant to provide additional information on how direct habitat loss would occur in one overlapping designation but not the others.</li> <li>• <u>Overlapping SAC and SPA / RAMSAR comparison</u> - The Saltfleetby SAC has a potential LSE from water quality impacts to habitats during construction and decommissioning, as Paragraph 6.2.127 states that <i>“the construction of the Theddlethorpe facility has the potential to cause a reduction in water quality through sediment disturbances if washed down into watercourses or onto adjacent habitats. If a pollution event were to occur, it could affect adjacent habitats. The main watercourses and water features flow from east to west towards Saltfleetby-Theddlethorpe Dunes &amp; Gibraltar Point SAC. All construction works associated with these watercourses have the potential to propagate sediments and spillages downstream”</i>. However, the Humber Estuary RAMSAR (to habitats) and Humber Estuary SPA (to species) do not identify LSE. The justification for this (footnote e of table 2 and footnote l of table 1 of Appendix G) states that <i>“The Environmental Damage (Prevention and Remediation) (England) Regulations 2015 (Ref 42) and the Environmental Permitting (England and Wales) Regulations 2016 (Ref 43) make it an offence to pollute watercourses, irrespective of whether they are designated as European designated sites or connect to designated sites. With embedded mitigation, impacts from run-off are predicted to be short term, intermittent and spatially local”</i>. The ExA requests the Applicant to provide additional information on how water quality impacts would occur in one overlapping designation but not the others.</li> </ul>	
1.12.30	Applicant	<p><b>In-combination assessment</b></p> <p>The HRAR [AS-026] presents an assessment of in combination effects within section 7.4 and Appendix A, however the HRA does not refer to</p>	<p>An update to the HRA [AS-026] is being prepared to address points raised by the Examining Authority and those raised by Natural England in their Relevant Representation [RR-073]. This will be included in revision B of the HRA and will be submitted to the ExA at Deadline 2. The</p>

ExA-Q.1.12	Question to	Question	Applicant response
		specific impact pathways as are presented for the project alone assessment. The Applicant is requested to update the HRA to provide a list of the potential in-combination effect pathways.	relevant impact pathways will be clarified in that update. For avoidance of doubt the impact pathways considered 'in combination' were noise & visual disturbance, loss of functionally linked habitat, water quality, and air quality.
1.12.31	Applicant	<b>AEol on Greater Wash SPA</b> Table 7-1 [AS-026] does not include a summary of operational impacts for the Greater Wash SPA. The Applicant is requested to provide an updated HRAR.	The matrices will be amended in Revision B of the HRA [previous reference AS-026]. This will be submitted to the ExA at Deadline 2.
1.12.32	Applicant	<b>Conclusions on AEol</b> The conclusion is of no AEol as stated in paragraphs 7.4.1-7.4.5 [AS-026] in the HRA report, however there is a potentially contradictory sentence at paragraph 7.4.6 which reads " <i>there will be adverse effects</i> ". Given the multiple references to no AEol this is assumed that the intended conclusion is no AEol, however can the Applicant confirm the intended result of the assessment, as if the sentence is in fact correct and there are adverse effects on integrity, the HRAR will require a stage 3 assessment to be undertaken.	The Applicant can confirm paragraph 7.4.6 should have read 'there will be no adverse effects'. This will be corrected in revision B of the HRA which will be submitted to the ExA at Deadline 2.
1.12.33	Applicant	<b>Assessment of AEol</b> Appendix H Table 6 [AS-026] includes operational in combination effects in the table, despite this being indicated as no LSE is stage 1. No other table in Appendix H appears to take forwards pathways that have been completely ruled out. The Applicant is requested to provide details on whether operational in-combination effects to the Humber Estuary SPA were intended to be taken forwards to stage 2, and should therefore be ticked as yes in Appendix G.	The matrices will be amended in revision B of the HRA [previous reference AS-026]. This will be submitted to the ExA at Deadline 2.
1.12.34	Applicant	<b>Mitigation for HRA</b> Throughout the HRAR [AS-026], where reference is made to embedded mitigation, it is predominately in relation to water quality. The Applicant is requested to provide detail on any other form of embedded mitigation which is relied upon to conclude no LSE during the stage 2 assessment, and confirmation that no additional mitigation was considered within the stage 1 screening assessment (as per paragraph 3.2.5).	Mitigation to prevent changes in water quality has been considered as embedded as paragraph 4 of the Environmental Damage Regulations 2015 states that the regulations cover environmental damage to (a) a protected species or natural habitat, or a site of special scientific interest; (b) surface water or groundwater; (c) marine waters; or (d) land. Mitigation to prevent changes in water quality has been considered as embedded as it would be applied regardless of HRA requirements. No other mitigation was assumed to be embedded mitigation or taken into account at Stage 1 (Assessment of Likely Significant Effects).

**Table 13: Q.1.13 Landscape and Visual Amenity**

ExQ1	Question to	Question	Applicant response
<b>Landscape Methodology</b>			
1.13.1	Historic England	<b>Historical Landscapes</b> Can Historic England confirm whether or not there are any concerns in regard to construction or operation phase development in historical landscape areas.	



ExQ1	Question to	Question	Applicant response
1.13.2	Applicant Local Authorities	<b>Assignment of value</b> The Area of Great Landscape Value is only assigned 'medium' value by the Applicant [APP-049, Table 7-11]. Is this a view shared and agreed upon with/ by the Local Authorities?	The Applicant considers that the assessment of medium value is appropriate for a local landscape designation in this context. It is acknowledged that the Area of Great Landscape Value (AGLV) has characteristics that elevate it above non-designated rural land in proximity. However, it is not of the same value as the nationally designated high value landscapes of the Study Area, such as the Lincolnshire Wolds National Landscape (formerly AONB).
1.13.3	Applicant Local Authorities	<b>Zone of Theoretical Visibility (ZTV)</b> Figure 7-5 [APP-049] sets out the ZTV for Immingham. It is noted that from this, there are no viewpoints provided to the Examination of the IAGI from the northern side of the Humber (such as Spurn Head). Could it be explained why this is the case?	Paragraph 7.4.30 of ES Chapter 7: Landscape and Visual [APP-049] sets out the Study Area adopted for the Proposed Development, noting that in proximity to the Immingham Facility, in response to taller and potentially more visible and intrusive elements, the Study Area was extended to 2km from the DCO Site Boundary. It is judged that significant landscape or visual effects will be unlikely beyond this Study Area. The LVIA Study Area is shown on Figure 7-2.  Although the ZTV indicates theoretical visibility, the model for the ZTV has assumed a 7m height for intervening buildings and structures. It therefore excludes the intervening tall buildings associated with Immingham Dock, Immingham Bulk Terminal and various warehouses at the DFDS container terminal. These are likely to provide a high degree of screening. In addition, any visibility of the taller elements of the Immingham Facility from Spurn Head would be viewed amongst and against the tall structure and stacks of the Humber Refinery and VPI Immingham. Spurn Head is over 23km from the Immingham Facility. Given that, coupled with the factors above, any elements of the Immingham Facility are unlikely to be individually identifiable or result in a significant effect on visual amenity at Spurn Head. As a result and given the fact that Spurn Head is outside of the Study Area by a considerable distance, no viewpoints from it were included in the LVIA.
1.13.4	Applicant	<b>Duration</b> It is stated the typical duration for a 1km stretch of open cut pipeline works are not anticipated to be more than seven months [APP-049, Paragraph 7.8.3]. Could the effect on a particular landscape or viewpoint (say from the Lincolnshire Wolds AONB) be longer due to consecutive 1km stretches being worked upon?	From the viewpoints assessed and on-site survey undertaken from the wider context of the Lincolnshire Wolds, it was concluded that intervening hedgerows, woodland and individual trees coupled with landform variation would limit views beyond 1km such that it is unlikely to add to the significance of effect. This is reflected with the adoption of a 1km Study Area for the pipeline being adopted as the limit of likely significant effects. In the event that views of distant works in other sections are concurrently visible for longer than 7 months they would be sufficiently distant and temporary not to change the outcome of the assessment.
1.13.5	Applicant	<b>Visualisation</b> The ExA require further information to understand the visual impact of the TAGI Option 2 upon the local countryside. Could a 3D (or equivalent) diagram be produced to show the TAGI Option 2 scenario at both Year 1 and Year 15, to demonstrate the level of screening and mitigation that could be expected [APP-049, Paragraph 7.8.156].	A 3D diagram is being produced to illustrate the TAGI Option 2 scenario. An additional photomontage at PRoW 252 off Mablethorpe Road A1031, where there is limited intervening vegetation, will be prepared for submission at Deadline 3.
1.13.6	Applicant	<b>CA vs Landscaping</b> The Applicant to explain how the landscaping at the block valve stations and the Theddlethorpe Gas Terminal (options 1 and 2) has been designed having regard to the principles of compulsory acquisition, requiring only land necessary for the project to be taken.	In the Outline Landscape and Ecological Management Plan (OLEMP) [APP-127], Figure 4 Landscape Plan shows mitigation planting associated with Theddlethorpe Option 2. At paragraph 1.1.8 of the OLEMP it is noted that specific landscape plans for Theddlethorpe Facility Option 1 have not been prepared as these facilities are located on the former TGT site which currently has planting and screening on its existing perimeter. The planting proposed for Option 2 is entirely within the red line boundary and at an approximate maximum width of 10m (for a tree/shrub mix) is regarded as the minimum required width which will achieve adequate

ExQ1	Question to	Question	Applicant response
			<p>screening of the Option 2 Facility. The planting width therefore requires only the land necessary to achieve adequate mitigation. Option 1 requires no additional land take or screening due to the existing mature screening, which also requires only land necessary for the project to be taken.</p> <p>Screen planting for each of the block valve stations are illustrated in the Outline Landscape and Ecological Management Plan (OLEMP) [APP-127], Figure 1, Figure 2 and Figure 3. The proposed planting lies entirely within the red line boundary and is typically between a minimum of 2m for hedgerow planting and up to 8m for trees and shrub planting (10m in total). This is regarded as the minimum required width which will achieve adequate screening of the block valve stations and deliver a naturalistic combination of hedgerow and tree/shrub boundaries.</p>
<b>Lincolnshire Wolds National Landscape</b>			
1.13.7	Applicant	<p><b>Stockpiles</b></p> <p>Although not specifically limited to the Lincolnshire Wolds AONB, it is noted that the Landscape and Visual Impact Assessment (LVIA) does not take account of stockpile heights or earth bunds [APP-049, Paragraphs 7.6.1 to 7.6.4]. Explain the rationale behind this omission and set out what effects, if any, such created features would have on the landscape, particularly around the central construction compound.</p>	<p>ES Volume II Chapter 7: Landscape and Visual [APP-049] paragraphs 7.6.1 to 7.6.4 relate specifically to the maximum height parameters used for the ZTV modelling. As the machinery height of 3.5m is greater than the soil bunds/stockpiles along the pipeline it has been adopted as a "worst case" visibility of the works. Actual visibility of the soil bunds along the pipeline will be within a reduced ZTV extent. The chapter does take account of visual and landscape effects from the stockpiles, for example paragraph 7.8.2 sets out potential effects from soil mounds and stockpiles of materials across all elements of the Proposed Development. These potential effects are then assessed throughout the chapter, for example at 7.8.33 in relation to pipeline Section 2 (replicated in subsequent sections) and 7.8.40 in relation to the central construction compound, noting that this is a short term and geographically localised effect on the Lincolnshire Wolds National Landscape.</p>
1.13.8	Applicant	<p><b>Compound choice</b></p> <p>The ExA noted on the USI that, at the central construction compound location, the land rises to the west within the Lincolnshire Wolds AONB. From within the AONB, there are views past the compound location out towards the coast to the east. Of all the locations along the 55km route, why was the location for the central construction compound chosen immediately abutting the edge of the Lincolnshire Wolds AONB in, what would appear to, quite prominent vistas?</p>	<p>The central compound is located close to the A18 to avoid vehicle access on the smaller, more rural road network and in addition is away from settlements. It is accepted that there will be some localised views, noting that in the chosen location there is also some existing screening derived from the line of trees to the east of the A18. The central compound was needed to store sections of pipe for the construction of the central part of the route (Section 3) The majority of Section 3 has a similar proximity to the National Landscape or else is closer to villages, which would increase the potential for visual, noise and traffic impacts for residents. The compound location is therefore a balance between efficient access, avoidance of use of minor roads and avoidance of centres of population, noting that it is a temporary use that will be fully reinstated and returned to its previous arable use.</p>
1.13.9	Natural England Local Authorities	<p><b>Protected Landscapes</b></p> <p>Are NE and the Local Authorities satisfied with scope of mitigation measures (including how it is secured) for the section of AONB within the Order Limits?</p> <p>Have the impacts and mitigation been satisfactorily dealt with for potential impacts on Lincolnshire Heritage Coast?</p>	
<b>Character and appearance of the countryside</b>			
1.13.10	Local Authorities	<b>Study Areas</b>	

ExQ1	Question to	Question	Applicant response
		Is a 1km study area appropriate for each of the BVS? Explain with reasons.	
1.13.11	Local Authorities	<p><b>Study Timing</b></p> <p>The surveys to inform the LVIA were undertaken in March and June [APP-049, Paragraph 7.4.31]. It would appear none have been done in the winter months. Explain what, if any, significance this has the findings of the LVIA and whether there are concerns about the limitations in the study.</p>	

**Table 14: Q.1.14 Noise and Vibration**

ExA-Q.1.14	Question to	Question	Applicant response
<b>Noise effects</b>			
1.14.1	Local Authorities	<p><b>Unattended measurements</b></p> <p>The Applicant has stated that six locations were used in making unattended measurements that are deemed to be representative of all sensitive receptors [APP-055, Paragraph 13.4.10]. The measurements were then said to have been undertaken in January and in late February. Explain, with reasons, whether there are any concerns regarding the scope or methodology of the assessment.</p>	
1.14.2	Applicant	<p><b>Noise measurements</b></p> <p>Why were unattended noise measurements not undertaken during Summer or Autumn months?</p>	<p>The approach to noise monitoring is to avoid school holidays and avoid periods when there may be intensive farming activities such as harvesting. This is based on guidance and best practice in the collection of baseline noise data. As such, noise monitoring in January and February is considered appropriate for defining representative baseline noise conditions. Weather conditions were monitored during unattended noise monitoring and periods of adverse weather conditions (i.e. heavy rain and/or wind speeds in excess of 5 m/s) were removed from data. This process is described in ES Volume IV Appendix 13-1 <b>[APP-108]</b>.</p>
1.14.3	Applicant	<p><b>Potential discrepancies</b></p> <p>The ExA have reviewed the information [APP-055, Figure 13-1] and have some queries:</p> <p>1) Point NM6 is further from the Order Limits than receptors R52 and R8. Explain why then that NM6 is considered representative when properties would actually be closer to the noise source than the monitoring location.</p> <p>2) Point NM5 and receptors R45 and R51 are in different geographical situations, so are likely to have different noise environments. Explain why point NM5 is representative?</p> <p>3) Point NM7 is further away from construction works than all the nearby receptors, with R11 and R12 in much closer proximity. Given the working corridor (said to be 30m in ES Chapter 3 [APP-045] could be anywhere inside the Order limits, receptor R11 may be exposed to much higher levels of noise than NM7. Explain why point NM7 is representative.</p> <p>4) Explain why Point NM14 is an appropriate monitoring location to represent the noise conditions at receptor R41, R42 and R48 when these receptors are clearly closer to the Proposed Development.</p>	<p>1), 3) and 4) Likely significant effects are identified at receptor locations and not at monitoring locations. Consequently, the monitoring location in relation to the Order Limits is not the main focus of noise monitoring. The main focus of noise monitoring locations is to provide representative baseline noise data in the local area including what would be expected at the identified receptor locations. Where there was any uncertainty due to potential variation in ambient noise levels at different grouped receptors, a representative 'quiet' location was selected. Therefore, whilst the noise monitoring locations have been used to identify existing noise levels at representative 'quiet' locations, it is the individual receptors, including those closer to the Order limits, for the Environmental Statement has assessed the noise impact of the construction activities.</p> <p>2) The Order limits are located in predominantly rural areas. Noise monitoring locations were selected to provide representative noise data for sensitive receptors in the immediate area. As receptors were grouped together, it is likely that there is variation in ambient noise conditions. Consequently, to ensure a robust approach, a representative 'quiet' location was chosen to measure baseline noise to represent a group of receptors. Thresholds applied in the noise assessment are based around measured noise levels. Consequently, situating monitoring equipment in a representative 'quiet' location is a conservative approach to defining baseline noise conditions.</p>
1.14.4	Applicant	<p><b>Noise measurements</b></p> <p>Why have ambient noise measurements not been taken at individual identified receptor properties? Would that not give a more accurate appreciation of their noise environments compared to a generalised representative point?</p>	<p>It is a common approach in noise assessments to group receptors together where ambient noise conditions may be considered to be similar. This approach is particularly relevant to large scale infrastructure projects, where there are a substantial number of receptors and noise monitoring at every receptor would be time and cost intensive but provide no material benefit to the noise assessment. The approach of grouping receptors is line with the approach taken in other NSIPs such as Net Zerto Teesside and HyNet.</p>



ExA-Q.1.14	Question to	Question	Applicant response
			<p>Noise monitoring locations were selected to provide representative noise data for sensitive receptors in the immediate area. As receptors were grouped together, it is likely that there is variation in ambient noise conditions depending on the receptor location. Consequently, to ensure a robust approach, a representative 'quiet' location was chosen to measure baseline noise to represent a group of receptors.</p>
1.14.5	Applicant	<p><b>Peak times</b></p> <p>Table 13-18 [APP-055] shows data for time periods other than the morning and afternoon peaks, and only for 2 dates in January 2023.</p> <p>1) Should more noise monitoring be done to verify the results being relied upon?</p> <p>2) Why are peak times in the a.m. and p.m. not included in the surveys?</p>	<p>Attended noise monitoring was undertaken to determine typical ambient noise conditions at receptors that would be affected by noise emission due to construction activities. This data allows context to be provided when identifying likely significant effects, if considered relevant.</p> <p>When obtaining noise data for a temporary construction noise assessment, it is a typical approach to take a short measurement that provides a 'snapshot' of ambient noise conditions. Given the rural location of the Order Limits and lack of any substantial temporary noise sources, a monitoring period of one hour is deemed suitable. Peak a.m. and p.m. hours are therefore avoided for baseline noise surveys, where practicable, to ensure that noise data is representative of 'quiet' periods during the day, giving a 'worst case' baseline for assessment.</p>
1.14.6	All Local Authorities	<p><b>Duration of effects</b></p> <p>From the ES [APP-055, Paragraph 13.7.10ff] there are many instances of predicted significant noise effects. These are all reduced to 'not significant' following the application of mitigation measures listed in section 13.8 [APP-055]. Do the relevant Local Authorities agree with these conclusions?</p>	
1.14.7	Applicant	<p><b>Tunnelling techniques</b></p> <p>Can it be explained why HDD and Auger Boring do not feature [APP-055, Table 13-19]?</p>	<p>HDD and Auger Boring are referenced in a separate section and table, refer to ES Chapter 13: Noise and Vibration paragraph [APP-055] 13.7.7 and Table 13-20 respectively.</p>
1.14.8	Applicant	<p><b>Auger Boring and Yew Tree Cottage</b></p> <p>It is reported that auger boring could take place between 15m and 120m from Yew Tree Cottage [APP-055, Paragraph 13.7.72]. The ExA notes that the receptor, known as R26, is said to be just 15m off of the DCO boundary.</p> <p>1) Logically, does that mean that the Auger boring could take place hard to the edge of the Order Limits?</p> <p>2) How, if such activity were to take place within 15m of R26, can it be concluded that the effects would not be significant [APP-055, Table 13-35] when it would appear to the ExA that no mitigation could be initiated for that property?</p>	<p>1) Auger boring is not planned to take place hard to the edge of the Order Limits because either topsoil or subsoil would need to be stored along the outer edge of the Order Limits, if the working width was adjacent to the edge of the Order Limits. Additional space is required between the subsoil/topsoil storage area and the auger bore equipment. In addition, the closest the Order Limits get to the property is actually 20m. This means that the auger boring could not take place as close as 15m to the property.</p> <p>2) As confirmed, auger bore activity could not take place as close as 15m from the property. Much of auger bore work will be conducted below ground level, and there is room within the Order limits for additional soundproof fencing/panelling to be installed to mitigate noise, as necessary. Therefore, the Applicant can confirm there would be sufficient space to install any necessary temporary sound mitigation fencing.</p>
1.14.9	Applicant	<p><b>Hydrostatic Testing</b></p> <p>The ES [APP-055, Paragraph 13.7.50] suggests additional mitigation would be required if hydrostatic testing was to be undertaken within 200m of a residence.</p> <p>1) Where would that testing be likely to occur?</p>	<p>1) Hydrostatic test locations have not yet been determined. Test locations are likely to be close to a road to facilitate ease of access to the pipeline. The proximity to residential properties will be a determining factor in deciding the final locations.</p>

ExA-Q.1.14	Question to	Question	Applicant response
		<p>2) What additional mitigation would be required?</p> <p>3) Who would be involved in agreeing that mitigation and when?</p> <p>4) Where is the additional mitigation accounted for or secured within the dDCO or its suite of management plans?</p>	<p>2) Mitigation measures for hydrostatic testing will be location specific but will include acoustic/visual screening and safety barriers in line with best practice.</p> <p>3) Mitigations will be proposed by the construction contractor and reviewed by the Applicant. The proposed mitigation measures would then be agreed with the relevant local planning authority. The mitigation measures will be put in place prior to the commencement of any works.</p> <p>4) A commitment has been added to the Draft CEMP [previous reference <b>[APP-068]</b> to confirm that should hydrostatic testing need to be undertaken within 200m of a residential property, appropriate mitigation measures will be agreed with the relevant local authority. The Applicant has provided an updated version of the Draft CEMP (Revision A) at Deadline 1 (<b>document reference 6.4.3.1</b>).</p>
1.14.10	Applicant	<p><b>Contractor Obligations</b></p> <p>Looking at measure I2 [APP-055, Paragraph 13.8.1], what if there would be additional or increased negative effects? What would the contractor do?</p>	<p>Section 13.7 of ES Chapter 13: Noise and Vibration <b>[APP-055]</b> provides a reasonable worst-case assessment of construction and vibration noise effects. This conservative approach covers any construction work within the Order limits. If any changes to the design would require a different construction method other than that assessed, an updated noise assessment would be submitted to the Local Authority. Any additional mitigation required to avoid significant effects would be agreed with the Local Authority and included in the Final CEMP.</p> <p>Measure I2 Paragraph 13.8.1 has been updated as follows:</p> <p>Following any changes to the design, the Contractor would ensure that an updated noise assessment has been carried out to ensure there would be no new or different significant effects on nearby receptors. Any additional mitigation required would be secured in the Final CEMP, to which the updated noise assessment would also be appended. The Final CEMP will require the approval of relevant local authorities.</p>
1.14.11	All Local Authorities	<p><b>Working out of hours</b></p> <p>The Applicant states that a Section 61 Consent would be required from the local authority in the event that HDD processes needed to be undertaken outside of core hours [APP-055, Paragraph 13.9.6]. Explain what process would need to be followed and what safeguards are there for the general public and noise sensitive receptors?</p>	
1.14.12	Applicant	<p><b>Noise and Vibration effects of tunnelling</b></p> <p>Please provide evidence of why the techniques that will be used for tunnelling (Auger Boring and HDD) have not been assessed for noise and vibration? Will any difficult ground conditions that are met affect this?</p>	<p>Auger Boring and HDD noise and vibration effects have been assessed in Section 13.7 of ES Chapter 13: Noise and Vibration <b>[APP-055]</b>. Table 13-20 provides distances from HDD and Auger Bore crossing works at which the LOAEL and the SOAEL noise levels are calculated to occur.</p> <p>If there is a requirement for a different methodology to be adopted due to difficult ground conditions, measure I2 <b>[APP-055]</b> Paragraph 13.8.1 secures the requirement for a new assessment to be submitted to the Local Authority and any additional mitigation to be secured in the Final CEMP.</p>
<b>Vibration effects</b>			

ExA-Q.1.14	Question to	Question	Applicant response
1.14.13		<b>There are no questions on this topic at this time. Questions may be asked in future Hearings or in further written questions.</b>	

**Table 15: Q.1.15 Socio-Economic Effects**

ExA-Q.1.15	Question to	Question	Applicant response
<b>Tourism and recreation</b>			
1.15.1	Applicant	<p><b>Tourist Operators</b></p> <p>There is reference to the existing benefits of tourism to the area, but the construction may, as an example, impact upon camping sites with safety aspects being an issue [RR-044]. An example is the case of glamping pods [RR-014]. What discussions have taken place with such operators and with what outcome?</p>	<p>Potential effects on tourism are considered in ES Volume II Chapter 16: Socio-economics [APP-058]. This assessment concludes that there would be a negligible effect at most during construction. No effects were anticipated during the operation of the Proposed Development and operational effects were therefore not included in the scope of the EIA (see ES Appendix 6.4.5.2 [APP-075]).</p> <p>The Applicant has not identified any camping sites where safe operation of the site would be an issue as a result of the Proposed Development, either during construction or operation. Where land affected by the Proposed Development is used for a business purpose, this have been considered as part of the routeing design and pre-application engagement with landowners. The Applicant will continue conversations with relevant landowners when planning construction to take account of farming activities and minimise any disruption as far as possible.</p> <p>The Applicant understands the business referenced in [RR-014] to be around 500 metres from the pipeline corridor at its nearest point, and over 1km from the Theddlethorpe Facility. The Applicant does not anticipate significant effects from its work on this location, and while a nearby road (Mablethorpe Road) will be used during construction, impacts on the road are not considered to be significant [APP-055].</p>
1.15.2	Local Authorities	<p><b>Quality of Information</b></p> <p>A range of tourism and recreational destinations and activities in the area are set out at in the ES Chapter 16 [APP-058]. In particular, there is the route of the English coastal path as mentioned at paragraph 16.5.35.</p> <p>1) Does this Chapter of the ES adequately describe the baseline so that effects on tourism and recreational users can be fully assessed? Are there other destinations which have been omitted that might be affected?</p> <p>2) If any additional tourism and recreational destinations are identified, please provide a plan to how their locations?</p> <p>3) Is the Applicants' assessment that potential impacts on tourism would be negligible adverse during the construction phase only reasonable? Should any effects during operation be considered?</p> <p>4) East Lindsey District Council [RR-031] mention the possible impact on tourism and they will comment further in their LIR. Can they be more specific at this stage?</p>	
1.15.3	Applicant	<p><b>Shoots</b></p> <p>Another local recreation is organised shoots [RR-066] which may well be affected by construction works. What reassurance can be provided to such organisers?</p>	<p>The Applicant has worked with landowners through the survey process to account for activities such as shoots and to minimise disruption where possible. The Applicant will continue to work with landowners to minimise disruption where practical and possible to do so.</p> <p>There is a process for claiming compensation in accordance with the statutory Compensation Code if there are losses suffered because of the impact by the development.</p>



ExA-Q.1.15	Question to	Question	Applicant response
1.15.4	Applicant Local Authorities	<p><b>Liaison Group</b></p> <p>The dDCO [AS-008] relates to the establishment of a local liaison group. Could the Local Authorities:</p> <ol style="list-style-type: none"> <li>1) Provide comment on this requirement in terms of whether it would meet the aims of keeping the community informed of the construction;</li> <li>2) Confirm whether they would take an active role in such a group; and</li> <li>3) Provide examples of where such groups have been established successfully for other major developments in the locality.</li> </ol>	<p>The Applicant confirms that there is no requirement to establish a local liaison group in the draft DCO [AS-040].</p> <p>The Applicant does, however, intend to engage with the local community during construction. Proposals are outlined in the ES Volume IV: Appendix 3-1 Draft CEMP [APP-068] in section 8.5 Public Communication and Liaison.</p>
<b>Commercial Enterprises</b>			
1.15.5	Applicant R Caudwell (Produce) Limited Imai Solar Limited	<p><b>Solar Farm</b></p> <p>There appear to be plans for a large solar park in the area [RR-086] with an option agreement already in place. What further discussions and negotiations have taken place?</p>	<p>The Applicant is aware through meetings with the affected party (R Caudwell) and their agent of the potential existence of an option for solar on parts of the affected party's land. While the affected party is yet to share details of the third party, including their name, the Applicant will continue to engage with the landowner and solar developer (once known) with an aspiration to allow for both developments to proceed and to reach an agreement by consent before the close of the examination.</p> <p>The Applicant will continue to engage with the landowner and compensation will be assessed on a case-by-case basis in accordance with the Compensation Code.</p>
1.15.6	Applicant	<p><b>Employment Opportunities</b></p> <p>Section 16.7 of Chapter 16 of the ES [APP-058] refers to the construction of the CO<sub>2</sub> pipeline as having the potential to generate regional and national demand for construction, engineering and manufacturing skills which will contribute to the economic benefits of 'The Project' of which the DCO Proposed Development applied for and subject to this Examination is part of. Can the Applicant:</p> <ol style="list-style-type: none"> <li>1) Further clarify (or through reference to the specific application information submitted) the specific nature and level of any job creation as part of the related economic benefits it is broadly referring to?</li> <li>2) Confirm whether any of the associated anticipated economic benefits attributable to the DCO scheme able to be directed locally? For example, benefits which could potentially facilitate local employment opportunity/ social mobility from nearby settlement areas?</li> <li>3) Advise of any discussions been undertaken to provide potential work pathway links/ opportunities with local education providers?</li> <li>4) Confirm if there is scope within the expected procurement mechanisms available to the Applicant to enable local employment provision/ opportunities?</li> <li>5) Commit to engagement with relevant Council's/ stakeholders to further explore maximising local socio-economic benefits wherever possible?</li> </ol>	<ol style="list-style-type: none"> <li>1) Across the value chain of all Viking CCS Cluster Member projects enabled by the Proposed Development (which includes capture projects, in addition to port, pipeline and offshore storage projects), Viking CCS is estimated to support around 10,000 jobs (56% directly) at the peak of construction activities. By 2035, approximately 4,000 permanent jobs are forecast to be supported, across a range of industries associated with operation of the carbon capture plants and other infrastructure. Please see Appendix G "Viking CCS: Transforming the Humber into a net zero SuperPlace".</li> </ol> <p>During operation, and specifically in relation to the Proposed Development, there are limited opportunities linked to operational and maintenance roles. However, specific construction skills needed by Viking CCS and its wider member projects as detailed above include welders, pipe fitters, scaffolders, industrial painters, grit blasters, mechanical fitters, platers, electrical and instrument technicians and process operators.</p> <ol style="list-style-type: none"> <li>2) Commitment L1 in the Draft CEMP [APP-068] states: <i>The Contractor will develop a Skills, Employment and Supply Chain Plan in liaison with the four Local Authorities, which will identify measures by which the potential economic benefits of the Proposed Development for local people and businesses might be maximised. This will include seeking to develop links with education and employment establishments in the locality if appropriate (for example, schools, colleges, employment agencies, and business groups). This will increase the potential for the Proposed Development to have a beneficial effect on the provision of training and apprenticeships and the local workforce.</i></li> </ol> <p>In addition, the Viking CCS Cluster Member projects enabled by the Proposed Development premise continued capital investment for the decade between 2025 and 2035, with a sustained</p>

ExA-Q.1.15	Question to	Question	Applicant response
			<p>need for large numbers of skilled workers. This is forecast to bring indirect benefits to regional economics as workers maintain a presence in the region for multiple years, over a series of projects, allowing secondary economic growth for housing and services in the local economies.</p> <p>The new infrastructure is a way to promote sustained inward investment and can help underpin long-term job creation in the region.</p> <p>By 2035, approximately 4,000 permanent jobs are forecast to be supported, across a range of industries associated with operation of the carbon capture plants and other infrastructure.</p> <p>3) Viking CCS has engaged with independent training providers across the Humber including CATCH UK and both the Hull and East Yorkshire Local Enterprise Partnership (HEY LEP) and the Greater Lincolnshire Local Enterprise Partnership, to fund two full-time roles (12 months each), with the aim of increasing and promoting connections between industrial, schools, colleges and independent training providers. These roles have worked across the energy transition sector. This will ensure that industry skills and knowledge are better embedded in careers programmes. This is a first step towards a sustainable effort at building knowledge and excitement in the future skills pipeline of students needed for the industrial investment demand to follow.</p> <p>In recognition of the thousands of skilled workers needed for energy transition projects, the Viking CCS Cluster (through Harbour Energy, Phillips 66 and VPI) is also spearheading funding for a state-of-the-art expansion to the CATCH training centre at Stallingborough. This initiative aims to create a new national net zero training centre with apprentice training places increased from 100 to 1,000 per year by 2030.</p> <p>Please also refer to commitment L1 in the Draft CEMP (detailed in part 2 of this response).</p> <p>4) Harbour Energy is promoting the Viking CCS Project within the local supplier community to provide transparency and information on opportunities that may exist. Harbour Energy is holding a supplier event in Humberside in May 2024 which will involve key emitters, NSTA, CCSA, CATCH and NOF. This event will provide an update on the project to the supply chain that attend the event. In addition, commitment L1 in the Draft CEMP <b>[APP-068]</b> as outlined in point 2 above is also of relevance.</p> <p>With reference to spearheading funding for CATCH (please see response to part 3 above) the Applicant is engaging with relevant stakeholders on an ongoing basis to work to improve future skills provision in the region.</p>
1.15.7	Applicant Local Authorities	<p><b>Socio-Economic Benefits</b></p> <p>The benefits of the scheme for the local economy appear very limited – these are set out at paragraph 16.11.2 of the Socio-Economic Report [APP-058] and assessed at employment during the construction phase of 222 with an income generation for the local economy (within a 60-minute drive) of £4.2 million. It is noted that East Lindsey District Council were broadly positive concerning the socio-economic impacts [RR-031] but to what extent is this consistent with the Local Plans of the host authorities?</p>	<p>The Planning Design and Access Statement <b>[APP-129]</b> considers how the Proposed Development accords with National and Local Planning Policy, and also assesses its overall planning merits. The Local Plans of the host authorities are, in general, supportive of development that will deliver infrastructure to support the transition of the UK to a low-carbon economy and meet Government targets for the UK to be 'net zero' for carbon emissions by 2050. The Local Plans are also supportive of development that delivers economic benefits to the areas.</p> <p>As well as direct employment and income generation during the construction period, the CCS industry presents an opportunity to develop new low-carbon jobs and expertise in the Humber and Lincolnshire areas with the Proposed Development providing training and upskilling</p>

ExA-Q.1.15	Question to	Question	Applicant response
			<p>opportunities including apprenticeships during the construction phase. In addition, the Proposed Development will contribute to decarbonising the Humber industrial region, helping to ensure existing jobs directly and indirectly linked to these industries are safeguarded, while creating new job opportunities.</p> <p>The Applicant considers that the Proposed Development is consistent with the Local Plans of the host authorities.</p>
1.15.8	Applicant	<p><b>Haul Road mitigation</b></p> <p>Concerns have been raised over the possible impacts arising from a haul road for the construction works on a garden centre business north of Alford and near the village of Maltby le Marsh [RR-119]. There seems to have been very limited discussion as yet – what proposals are being suggested to minimise any disruption?</p>	<p>The Applicant believes that RR-119 has been withdrawn, which the Applicant considers supports that any potential impacts can be suitably mitigated.</p> <p>There is no haul road, or running track, within 5km of the garden centre business north of Alford.</p> <p>A haul road, known as a running track, will be constructed along the entire working width where practicable to allow the passage of vehicles, plant and materials/pipe. It is intended that the haul road will be directly onto the sub-soil but depending on ground conditions and weather conditions, a geotextile membrane and stone surface and/or bog-mats may be used in selected areas to enable traffic movements.</p> <p>Following pipeline installation, reinstatement will be conducted in accordance with Landscape and Ecological Reinstatement Plans and will include the following steps:</p> <ul style="list-style-type: none"> <li>• In areas where land compaction has occurred, or where required by the landowner, it may be necessary to undertake subsoil restoration techniques to restore the structure of the subsoil and to assist with future drainage;</li> <li>• Topsoil would be returned to its final location at the earliest suitable time of year;</li> <li>• The topsoil would be levelled, cultivated and reseeded as agreed with the landowner/occupier;</li> <li>• The contractor would clear all temporary working areas and accesses as the work proceeds, and when they are no longer required for the works;</li> <li>• On completion of the construction works, all plant, materials and temporary works/structures would be removed;</li> <li>• Where possible, reinstatement of natural vegetation would generally be conducted using the same or similar species to that removed (subject to restrictions for planting over and around pipeline easements);</li> <li>• All drains encountered would be reconnected in consultation with the landowner/occupier.</li> <li>• Reinstatement after construction will be undertaken at the appropriate time within the same year as construction, should weather conditions allow.</li> </ul>
1.15.9	Applicant Driver and Vehicle Standards Agency (DVSA)	<p><b>Relocation Negotiations</b></p> <p>It appears that the DVSA will need to relocate [RR-030]. What is the latest position concerning an alternative site?</p>	<p>The Applicant understands the DVSA's position to be that they would not need to relocate their operations if the pipeline passed through a preferred area, which has been discussed between the parties. The Applicant is proposing to give the DVSA notice of at least 12 months if it considers that the routing of the pipeline may not be within the preferred area. Both parties have agreed that is a suitable time to facilitate relocation taking place. The Applicant and the DVSA are continuing to work towards a fully agreed commercial arrangement.</p>

ExA-Q.1.15	Question to	Question	Applicant response
1.15.10	Applicant	<p><b>Retained agricultural viability</b></p> <p>A number of local farmers raise concerns as to the return to agricultural use following the completion of construction works. There is a concern that the works should be time limited. This will be covered in discussions over the dDCO but clearly the local farmers are expecting some certainty concerning the timelines. Can the Applicant provide any reassurance?</p>	<p>Table 3-5 within ES Chapter 3: Description of the Proposed Development [APP-045] sets out the typical construction activities and duration of works that would take place within a 1km section of open cut pipeline installation. In general, this will take approximately seven months at any one location. During that period, the Applicant would fence off the working area, which would typically be 30m wide. At the end of that construction period the land will have been reinstated and can be returned to the landowner and agricultural activities can recommence.</p> <p>The Applicant notes that the seven-month period is a reasonable estimate based on experience from other similar pipeline installations. In the event that persistent adverse weather conditions (or other issues) mean that construction works could not be completed between April and October, when weather conditions are most favourable, then the pipeline construction would be halted at a suitable time and the site would be "winterised". In the event that this was required, the Applicant's expectation is that this would only be a small section of the overall pipeline route. Construction work would then recommence the following spring. However, subject to weather conditions and consent of the landowner, topsoil reinstatement may continue to return the land to former state where this appropriate.</p>
1.15.11	Applicant Mablethorpe Flexible Generation Limited	<p><b>Theddlethorpe AGI</b></p> <p>Particular concerns have been raised in relation to the future use of the TGT and it seems that negotiations are already advanced for a lease of the site to Mablethorpe Flexible Generation Limited [RR-056]. They suggest that the projects can co-exist.</p> <p>To what extent is this achievable?</p>	<p>As set out in the additional submission by National Gas Transmission ("NGT") [AS-055], the Applicant has had detailed discussions with NGT about the use of the former Theddlethorpe Gas Terminal for the Proposed Development. Agreement in principle has been agreed on the main terms. Those discussions have had regard to the proposals of Mablethorpe Flexible Generation Limited for lease of land owned by NGT. The Applicant has also engaged directly with Mablethorpe Flexible Generation Limited.</p> <p>The Applicant considers that it is achievable for both projects to co-exist and believes that an in-principal solution has been agreed. The Applicant will inform the Examining Authority if an agreement can be reached that is suitable for all parties.</p>
<b>Effects on social infrastructure</b>			
1.15.12	Applicant	<p><b>Schools</b></p> <p>The two primary schools at South Killingholme and Immingham are within 1km of the DCO Order Land. As acknowledged at paragraph 16.5.36 of the Socio Economic Report [APP-058] these could lead to some impact on residents where access to the schools may be more difficult. How is it proposed to alleviate such problems?</p>	<p>Where possible, traffic routes have been selected to avoid schools, including the two primary schools at South Killingholme and Immingham. The Traffic Management Plan will detail requirements of restrictions on construction traffic using these routes during school opening or closing time which will reduce impact on school-related traffic.</p> <p>A Draft CEMP [APP-068] has been developed which sets out initial mitigation measures to help avoid or reduce environmental impacts during the construction phase of the Proposed Development. Relevant measures which could be implemented which would alleviate any potential problems arising relating to accessing local primary schools are summarised below:</p> <ul style="list-style-type: none"> <li>• Section 4.8 of the Draft CEMP [APP-068]: A Traffic Safety and Control Officer (TCSO) may be appointed, if not undertaken by Contractor's SHE team to, amongst other roles, ensure works are in accordance with Traffic Management Plan (TMP), manage applications for any required Traffic Regulation Orders, investigate and manage any traffic related complaints, and monitor Traffic Management schemes to ensure effectiveness and safety to workers and public.</li> <li>• Mitigation Measure A3 in Draft CEMP, Table 3 [APP-068]: Prior to commencing work on site, a Stakeholder Communications Plan detailing community engagement measures will be developed and implemented. This will provide a framework for notifying the public</li> </ul>



ExA-Q.1.15	Question to	Question	Applicant response
			<p>of the proposed programme of works (including working hours) in relevant locations in advance.</p> <ul style="list-style-type: none"> <li>• Mitigation Measure A22 in Revision A of the Draft <b>CEMP</b> (document reference 6.4.3.1): The Proposed Development will be registered with the Considerate Constructors Scheme or similar, to encourage environmental and social best practice.</li> </ul> <p>The Draft Public Right of Way Management Plan [<b>APP-123</b>], which will be finalised once a contractor is appointed, outlines effective measures which will be implemented to ensure that temporary PRow diversions are minimised in terms of distance and duration. Measures will be undertaken such as use of signage and information, managed crossings and temporary closure where required, and traffic management measures.</p>
1.15.13	Local Authorities	<p><b>Blue light services</b></p> <p>Certain emergency services (such as the Police and Ambulance) may experience some disruption during construction works. This in particular applies to the Immingham West Fire Station. How is it proposed that any impacts are minimised?</p>	<p>The planned works will not directly affect the Immingham West Fire Station as the road crossings in this area are trenchless and therefore access to the road network will be maintained.</p> <p>Following award of the construction contract the Applicant's construction contractor will liaise with the emergency services with regards to planned work schedule.</p>

**Table 16: Q.1.16 Traffic and Transport**

ExA-Q.1.16	Question to	Question	Applicant Response
<b>Local Road Network</b>			
1.16.1	Applicant	<p><b>Implications of updated guidance</b></p> <p>The ES [APP-054, Paragraph 12.2.17] states it was prepared on the basis of 1993 guidance and not that published in July 2023. It is stated because the assessment commenced prior to July 2023, the assessment was not done with the updated guidance applied.</p> <p>1) Are there written transitional arrangements that state a project commenced prior to July 2023 could be based on the 1993 guidance? Provide evidence.</p> <p>2) What implications would there be if the 2023 guidance was followed and what parts of the assessment would be impacted/ affected the most?</p> <p>3) Provide a highways technical note be produced to clarify what the significance of the July 2023 guidance is and how it would impact on the outcomes of the ES.</p>	<p>1) The Applicant is not aware of any transitional guidance, although it would consider that any ongoing assessment at the time of publication should continue to use the guidance valid at the time of starting the assessment, albeit with an awareness and acknowledgement of any new guidance and adapted approach.</p> <p>2) and 3) The only change of substance relates to the assessment of Fear and Intimidation, which now requires the user to determine a baseline “degree of hazard” based upon the proportions of average traffic flow over an 18-hour day, the total number of HGVs, and the speed of traffic. This is repeated using the Construction traffic flows and a new “score” determined. The magnitude of the Fear and Intimidation impact is then determined based upon the change in the score.</p> <p>The remainder of the assessment criteria as set out in Table12-6 of ES Chapter 12: Traffic and Transport [APP-054] would not change as a result of using the new guidance. Note that an updated version (Revision A) of ES Chapter 12: Traffic and Transport will be submitted to the ExA at Deadline 2.</p> <p>The Applicant does not expect the use of July 2023 guidance to affect the findings, but this will be confirmed via a Technical Note, which will be submitted to the ExA at Deadline 2.</p>
1.16.2	Applicant	<p><b>Road surfaces</b></p> <p>It is noted that East Lindsey District Council asked for the ES to look at impacts on road surfaces, but the Applicant declined as: “<i>The assessment does not cover impacts on highways surfaces, as this is not an environmental impact per se.</i>”</p> <p>1) In determining which links were suitable for construction traffic, including Heavy Goods Vehicles (HGVs), did the Applicant take road surface conditions into account at all?</p> <p>2) The ExA observed numerous single-track rural roads on the USI where the verges were churned, muddy or crumbling as a result of vehicles trying to pass each other. Is the Applicant suggesting that further degradation of these road verges, affecting the condition of the highway as a whole, by their use during construction would not amount to an environmental impact?</p> <p>3) IPs have also raised concerns relating to construction traffic issues. Please provide the assessment that demonstrates the suitability or otherwise (plus any required mitigation) of local roads to accommodate construction traffic, particularly on narrow lanes such as Red Leas Lane, Thoroughfare and Pick Hill Lane.</p> <p>4) Will a road condition survey be carried out alongside and in consultation with the local highways authority?</p>	<p>1) Current road surface condition was not a key consideration. Key considerations included ensuring the constructability of the pipeline, road geometry, and whether routes would impact on communities.</p> <p>For a cross country pipeline, it is inevitable that some smaller roads will need to be used and it is acknowledged that there is some potential for construction traffic to impact upon the condition of roads, particularly if they are already in a poor condition.</p> <p>2) and 3) The potential for impacts to road surfaces or verges would not ordinarily be assessed under the traffic impact assessment guidance. The Applicant will ensure that measures are put in place to limit impacts and care will be taken to avoid such impacts and that any degradation will be rectified based on highway inspections. These measures have been added to the Draft CEMP (Revision A) submitted at Deadline 1 (<b>document reference 6.4.3.1</b>). There are no restrictions on HGV movements on Red Leas Lane or Pick Hill Lane. Construction traffic on Thoroughfare would be limited to vehicles required to construct the block valve station. This has been added to the Draft CEMP as Measure H11.</p> <p>4) and 5) The Applicant will conduct a pre-construction condition survey (dilapidation survey) to include the road, kerbs, and verges, in agreement with the local highway’s authorities. This is secured in the Draft CEMP as Measure H7.</p> <p>The final CEMP will include a requirement for the contractor to undertake regular inspection surveys of key routes (timescale to be agreed) throughout construction. Any damage identified that has been caused by construction traffic will be rectified. The final CEMP, including these</p>

ExA-Q.1.16	Question to	Question	Applicant Response
		<p>5) What recourse is there in the dDCO or other controlling documents, for the local highways authority or the local public, to seek reinstatement and repair of roads, carriageways and verges to a safe condition during or post construction?</p> <p>6) Would not highway surface conditions count into a highway safety consideration in a Road Safety Audit?</p> <p>7) The <b>Outline Construction Traffic Management Plan (OCTMP) [APP-107]</b> states, on page 24 of 41, that it would be essential to take precautionary measures to protect roads from surface damage. Please identify what those measures would be and where the dDCO or its controlling documents would ensure such measures would be implemented.</p>	<p>measures, will be agreed with the local highways authority under requirement 5 of the Draft DCO <b>[APP-006]</b>.</p> <p>6) Road Safety Audits (RSA) are undertaken when highways improvements are planned. For the Proposed Development the design of any proposed highways works, such as the creation of new access bell mouths, would therefore be the subject of an RSA.</p> <p>As part of the RSA for new accesses or other street works an auditor may recommend that the design team confirm that the existing and proposed road surfaces are in accordance with the relevant design standards. It would then be the design team's responsibility to specify an appropriate surface.</p> <p>7) As stated on section 8.7 of the Draft Construction Traffic Management Plan (dCTMP) <b>[APP-107]</b> in relation to the movement of heavy plant at road crossings, road surface prevention normally comprises of placing rubber tyres, mats or similar material onto the road surface during the short period it will take to complete the plant movement across the road. Such protection will then be removed to the inside of the working width access gates. Qualified NRSWA supervision will be on hand to ensure traffic is controlled in a safe and timely manner at haul traffic access points and during operations on the public highway. This has also now been added as an additional measure in the updated (Revision A) Draft CEMP (<b>document reference 6.4.3.1</b>). The CEMP is secured through requirement 5 of the draft DCO and the CTMP through requirement 6.</p>
1.16.3	Applicant	<p><b>Updates to Transport Assessment</b></p> <p>The <b>ES [APP-054, Paragraph 12.4.32]</b> suggested that an updated Transport Assessment would be submitted to the Examination (prior to its commencement) following greater clarity on the programming of works. Provide updates with the relevant technical explanation.</p>	<p>A revised version of ES Chapter 12: Traffic and Transport (Revision A) will be submitted at Deadline 2.</p> <p>The revised traffic numbers will also be used to provide an update (Revision A) of the Transport Assessment (TA) <b>[APP-106]</b>, which will be submitted at Deadline 2.</p> <p>The TA will address the comments made by National Highways in its Relevant Representation [RR-072].</p>
1.16.4	Applicant	<p><b>Construction programming</b></p> <p>The <b>ES [APP-054, Paragraph 12.3.6]</b> assumes that all construction activities would be onsite concurrently. What is the likelihood of this scenario occurring?</p>	<p>Standard pipeline installation techniques can be likened to an assembly-line process, with sections of the pipeline being completed in a sequence of repetitive steps starting with setting out and finishing with reinstatement.</p> <p>The resources, materials and support functions will closely follow each respective task, be that setting out, stringing, field bending, welding, excavation, lower and lay, backfill and reinstatement, moving along the pipeline route.</p> <p>Given the factors described, the likelihood of all construction activities occurring concurrently is remote however by undertaking the assessment on this basis a worst case has been assessed.</p> <p>The issue of the assessment being based on an unlikely scenario has been addressed by the development of a phased construction schedule and its associated phased traffic figures. ES Chapter 12: Traffic and Transport <b>[APP-054]</b> has been updated based on this new schedule and an updated version (Revision A) will be submitted at Deadline 2.</p>

ExA-Q.1.16	Question to	Question	Applicant Response
1.16.5	Applicant	<p><b>Abnormal Indivisible Loads (AILs)</b></p> <p>The ExA understands that construction traffic would be restricted to routes identified in the assessment except for <b>AILs [APP-055, Paragraph 12.4.32]</b>. The <b>OCTMP [APP-107]</b> provides no clarity on the movement or management of AILs on the network. Provide a highways technical note detailing the movement and management of AILs, including any necessary road closures or laydown areas adjacent to construction works that may require closure or blockage of a particular street or lane of a highway.</p>	<p>The Proposed Development does not currently require any AILs for the movement of project material or equipment.</p> <p>In the unlikely scenario the FEED process identifies a requirement for AILs then an AIL management plan will be developed and agreed with National Highways and Local Highway Authorities. This has been added to the Draft CEMP as Measure H12.</p>
1.16.6	Applicant	<p><b>Traffic counts</b></p> <p>The ExA observe <b>[APP-055, Figure 12-2]</b> that there are very few traffic counts on the west side of the Order Limits compared to those undertaken on the east. Is this just a reasoning behind this?</p>	<p>The traffic count locations have been determined based upon the predicted routing of construction vehicles, which has been set out in section 12.5 of ES Chapter 12: Traffic and Transport <b>[APP-054]</b>. Due to the unknown origin of construction materials at this time, the primary routing has been assumed via the M180 to the north. Construction traffic has then been distributed using the most appropriate routes, which as shown on Figure 12-1 – Key Highway Links are the A1173, A18, A16 and A1031 which lie to the east of the Order Limits.</p>
1.16.7	Applicant	<p><b>Explanation of Table</b></p> <p>In <b>Table 12-36 [APP-055]</b>, the ExA observe several records of “0%” in the columns. Can it be explained how that is achieved and what it means?</p>	<p>A “0%” record indicates that no construction traffic forecast to travel on that particular link. This was established from the traffic distribution set out in Table 12-36: Total Construction Daily Trip Generation by Link – Construction and Workers of ES Chapter 12: Traffic and Transport <b>[APP-054]</b>.</p> <p>Within the revised (Revision A) of ES Chapter 12: Traffic and Transport to be submitted at Deadline 2, any links not proposed to be used during construction have been removed from the assessment.</p>
1.16.8	Applicant	<p><b>Traffic Management</b></p> <p>There does not appear to be a strategy, with the <b>ES [APP-054]</b> or the <b>OCTMP [APP-107]</b> for the general management of public traffic on the highway at times when the highway is required during construction (i.e.; no details of road closures, roadworks, diversions, length or duration of diversions etc). Provide the necessary information to demonstrate how traffic would be handled in such situations.</p>	<p>Traffic management will only be deployed where it is essential, to avoid disrupting the local road network. The type of traffic management that will be deployed will depend on several key factors including traffic speeds, road widths, visibility and site characteristics. During access point construction, the form of traffic management deployed may include priority signs, stop/go boards or traffic signals. In some instances, there may need to be additional approach signage to reduce speeds where required. The Applicant will coordinate the timing of any traffic management with the relevant Local Highways Authority.</p> <p>The roadworks likely to require traffic management are:</p> <ol style="list-style-type: none"> <li>1) The installation of temporary access points when access bellmouths would be constructed. This would be for a short period of time (indicatively 1-3 days) and traffic management would be removed upon completion.</li> <li>2) Only two public roads have been identified to be crossed using an open cut technique, which are Mill Lane (RDX007P) and Washingdales Lane (RDX015P). These are very small lanes with little traffic, therefore suitable measures will be put in place to maintain access such as using a steel plate.</li> </ol> <p>No road closures or diversion are anticipated as all other public roads will be crossed using trenchless techniques.</p>



ExA-Q.1.16	Question to	Question	Applicant Response
1.16.9	Applicant	<p><b>Shared transport</b></p> <p>The ES [APP-054, Paragraph 12.14.5] states the assessment of effects does not take into account potential car sharing or minibus transportation for construction crew worker movements, so the level of trips is likely to be less than predicted. Given that this may be the case, provide justification as to why the car parks at each of the construction compounds are sized the way they are. Would the implementation, at the onset, of a mandatory shared transport scheme for workers result in smaller car parks/ land take?</p>	<p>The assessment presented in ES Chapter 12: Traffic and Transport [APP-054] assumed that all workers will drive to site. This approach was undertaken to ensure a worst-case scenario was assessed. It is likely that there will be car sharing, and also minibus transportation to site which will reduce the number of vehicles needing to park at access points. The parking areas are sized to allow for the delivery of plant to site, which will require a low loader to enter the site, drop off the plant and then turn around to exit. As such a reduced number of construction worker cars would not reduce the size of the car parking area. Construction plant will still need to park in these areas.</p>
1.16.10	Applicant Local Highways Authority	<p><b>Conclusions</b></p> <p>The ExA observes that the ES [APP-054, Table 12-76] records residual moderate adverse effects on a number of routes. Are there any further mitigations that can be explored to reduce the effects?</p>	<p>In addition to the measures committed to in the Draft CEMP [APP-068] and Draft CTMP [APP-107], there are several other measures that can and will be adopted. These include:</p> <ul style="list-style-type: none"> <li>• The Contractor will further develop the construction schedule and the proposed use of construction access routes to better 'smooth out' peaks in construction traffic with the aim of reducing all potential effects to minor or negligible. Of particular note are the moderate effects reported on the A1031, which can likely be alleviated through routeing more of the construction traffic via the B1200.</li> <li>• The Applicant will issue bulletins during construction to local stakeholders to keep them informed of upcoming construction activities where an increase in HGV movements is likely. This has been added to the Draft CEMP as Measure H10.</li> </ul> <p>These measures have been added to the Draft CEMP [APP-068], an update of which (Revision A) has been submitted at Deadline 1 (document reference 6.4.3.1).</p>
1.16.11	Applicant	<p><b>OCTMP and OCEMP</b></p> <p>The OCTMP [APP-107] does not appear, in itself, to contain mitigation measures. There appears to be a reliance on the OCEMP [APP-068] for these. Explain the interaction between the OCTMP and the OCEMP.</p>	<p>The Draft CTMP [APP-107] was developed to demonstrate how the Proposed Development would use the public highway during construction. This initial document was developed to provide information on the type of construction vehicles to be used, the initial estimate of required journeys, the anticipated routes which would be followed for different construction activities (e.g. initial pipe delivery as well as main construction works). Mitigation measures are captured in the Draft CEMP. The future iterations of the CTMP will include information on the agreed mitigation measures.</p>
1.16.12	Local Highways Authority	<p><b>Methodology</b></p> <p>Models are referred to in the ES [APP-055, Paragraph 12.4.13] and the Transport Assessment [APP-106] including the TEMPRO v7.2 and a gravity model for construction worker distribution. Are these accepted input sources for the assessments?</p>	
1.16.13	Local Highways Authority	<p><b>Road Safety Audit</b></p> <p>The application does not appear to be accompanied by a road safety audit to verify the conclusions of 'no severe impact' within the Transport Assessment. Is this a concern?</p>	

ExA-Q.1.16	Question to	Question	Applicant Response
1.16.14	Applicant	<p><b>Construction traffic impacts</b></p> <p>The assessment for construction traffic impacts focuses primarily on the number of vehicles potentially to be generated by the construction phase of the Proposed Development. Please signpost where in the Application documents other assessment factors have been considered, including road safety, suitability of roads to accommodate construction traffic.</p>	<p>Highway safety is an assessment topic already covered in ES Chapter 12: Traffic and Transport [APP-054], an updated version (Revision A) of which will be submitted at Deadline 2.</p> <p>Only one of the proposed construction traffic routes is identified as not suitable for Heavy Goods Vehicles, which is Thoroughfare. The Applicant has committed to restricting the use of this road to vehicles associated with the construction of the Thoroughfare Block Valve Station. There will be no pipe delivered via this route.</p> <p>Please refer to the response to WQ1.16.2 for details of proposals for highway condition surveys, monitoring, and repairs.</p>
1.16.15	Applicant	<p><b>Construction Programme</b></p> <p>Please confirm the duration of the proposed construction works applied for, including stating the proposed start date.</p>	<p>Overall pipeline construction works are proposed to take approximately 15 months based on a start date of September 2025 as detailed in the high-level construction programme Figure 3-29 in [APP-045]. These dates are based on the premise that all necessary consents and licences are in place.</p>
1.16.16	Applicant	<p><b>Cumulative Construction Traffic</b></p> <p>Will there be a situation where construction traffic from this proposed development would be using the local highway network or SRN at the same time as construction traffic from other consented (or currently active but not yet consented) NSIPs? If yes, please provide details on the likely impacts of this.</p>	<p>A qualitative cumulative assessment has been undertaken and included with Section 12.3 of the ES Chapter 12: Traffic and Transport [APP-054] the conclusion being that there is likely to be minimal potential for cumulative impact along most of the route with the exception of the area around Immingham. As the routes proposed to be used close to Immingham are already subject to extensive use relating to the docks and industry in this area, the traffic generated by the Proposed Development is predicted to have only a negligible effect. As such it is considered highly unlikely that the Proposed Development could have significant cumulative effects. However, a quantitative cumulative assessment is currently being prepared which will be submitted to the ExA within Revision A of the Transport Assessment at Deadline 2.</p>
1.16.17	Applicant	<p><b>Impact of construction traffic on level crossing</b></p> <p>Please confirm the potential impact of construction traffic on the operation of railway level crossings in and near the Order Limits.</p>	<p>Two railway level crossing locations have been identified near the pipeline route, at Roxton Rd (B road) and Little London (A1173). Both level crossings would see an increase in traffic during the construction programme, 11% for all traffic at Little London and 24% for all traffic at Roxton Road.</p> <p>In terms of the level crossing along Roxton Road this will be solely limited to LGV traffic with no HGVs required to pass over the line.</p> <p>The Applicant does not expect these increases in construction traffic to have any impact on the operation of the railway level crossings at Little London or Roxton Road, which will continue to operate as before.</p>
<b>Strategic Road Network</b>			
1.16.18	National Highways	<p><b>Highway Capacity</b></p> <p>As a result of the Proposed Development, either alone or cumulatively with other plans or projects, are there any concerns about highway or junction capacity at any point on the strategic road network?</p>	
1.16.19	National Highways	<p><b>Fitness of the Transport Assessment</b></p> <p>In the relevant representation [RR-072, Paragraph 2], it appears there are concerns regarding the transport assessment. Please outline what</p>	

ExA-Q.1.16	Question to	Question	Applicant Response
		deficiencies are considered to exist in the Transport Assessment and if, as a result of these, its conclusions cannot be considered robust.	
1.16.20	National Highways	<b>Street works beneath the Strategic Road Network (SRN)</b> Insufficient detail has been provided for the underground crossings under the SRN. Please provide relevant detail in the form of a technical note. Would the Applicant be relying on the right powers in order to be able to undertake the works they intend in the vicinity of the SRN?	
1.16.21	Applicant	<b>Scope of transport assessment</b> National Highways has stated in their Relevant Representation that there has been a lack of consultation with them on the scope of the ES. There is a lack of precision on any potential traffic impact caused by construction vehicles. It is also noted that relevant national planning policies have not been used. Please provide comments on these issues and what the implications are for the submitted ES.	Following a number of meetings with National Highways, the Applicant is further engaging with National Highways to fully address its Relevant Representation [RR-072]. The Applicant does not consider that any of the additional information requested has any implications for the ES as submitted. It also considers that an agreed position can be reached in due course.
1.16.22	Applicant	<b>Approval of CTMP and Construction Workers Travel Plan</b> Should NH have an approval role rather than a consultee role for the CTMP and Construction Worker TP? Please provide evidence for your response.	The Applicant does not consider that National Highways should be the discharging authority, but considers it more appropriate for them to have a consultee role. The Applicant considers that the standard approach to discharge of any DCO requirement or condition in a planning permission relating to the need for a construction traffic management plan is for the local planning authority to be the discharging authority, following consultation with the relevant highways authorities. This approach has been taken by the Secretary of State in a number of recent DCOs involving linear development, for example:  Requirement 19 of the Hornsea Four Offshore Wind Farm Order 2023 Requirement 18 of the Net Zero Teesside Order 2024 Requirement 7 of the HyNet Carbon Dioxide Pipeline Order 2024
1.16.23	Applicant	<b>dDCO Schedule 3</b> National Highways has stated that Schedule 3 of the dDCO is incomplete. Please provide commentary on this and updated Schedule 3 of the dDCO.	As noted in response to WQ 1.7.8, the Applicant does not consider the installation of the pipeline under the strategic road network by trenchless crossing technique to constitute 'street works', as the works would be outside of the zone of influence of the street. The subsurface land affected would therefore not be considered to form part of the street. The Applicant is continuing to engage with National Highways to fully understand their position.
<b>Public Rights of Way</b>			
1.16.24	Local Authorities	<b>Impacts and diversions</b> Are the Local Authorities content that sufficient information exists in the Examination to understand and assess the impacts upon public rights of way? If not, what more is required?	
1.16.25	Applicant Local Authorities	<b>Length of diversion</b> <b>The Public Access and Rights of Way Plan [APP-033]</b> details several footpath diversions that seem, in general, to direct walkers around fields and field boundaries (for example 3-PC to 3-PD). The	Public footpath diversions have been designed to ensure that the pipeline can be installed while keeping the public safe. Most of the diversions will be short in length and duration, and the original PRow will be reinstated after the pipeline has been installed. The actual diversions are likely to be shorter than those shown on the Access and Rights of Way Plans, as they show the diversion across the entire 100m limit of deviation, whereas the footpaths will generally only

ExA-Q.1.16	Question to	Question	Applicant Response
		<p>ExA would like to know what qualitative analysis has gone into programming these diversions and whether the footpaths are equally as convenient and accessible to footpath users in comparison to the original right of way being diverted.</p>	<p>need to be diverted around the 30m working width. The final diversion routes will be subject to agreement with the Local Authorities as part of the approval of the Public Right of Way Management Plan within the final Construction Environmental Management Plan (CEMP).</p> <p>Where feasible, diversions have been kept within the same fields to minimise inconvenience to users of the PRoW. Refer to <b>[APP-123]</b> for further information.</p>
1.16.26	Applicant	<p><b>Thoroughfare</b></p> <p>The ExA observe an instance on <b>The Public Access and Rights of Way Plan [APP-033]</b> where the diversion does not full extend beyond the temporarily restricted access (when travelling south from 16-PA to 16-PB). Beyond the diverted path, there appears another stretch of temporarily restricted right of way for which no diversion is proposed. Explain.</p>	<p>At the southern extent of the proposed footpath diversion (16-PB), it is proposed that the diversion re-joins the normal footpath route as it crosses Thoroughfare. Works within this location are limited to the installation of an electrical cable and it will be possible to facilitate a safe crossing of these works without a footpath diversion. An updated version of the Access and Rights of Way Plan (Revision B) that reflects this change has been submitted at Deadline 1 (<b>document reference 4.20</b>).</p>
1.16.27	Applicant	<p><b>Theddlethorpe Option 1</b></p> <p>On sheet 35 of 36 of <b>The Public Access and Rights of Way Plan [APP-033]</b>, there appears to be a public right of way within the Order Limits that is not proposed to be temporarily restricted despite appearing to be on a construction route. Is this correct and, if so, would there be a banksman or other form of control mechanism to keep walkers on the path safe when interacting with construction traffic?</p>	<p>This Public Right of Way is within the Order Limits and is not planned to be diverted as it follows the pathway that runs alongside the access road. This footpath does not need to be diverted as it does not cross the pipeline construction corridor.</p> <p>Where the footpath crosses the road, the pedestrian crossings will be re-marked and signs put in place for pedestrians and vehicles. A 10 mile-per-hour speed limit will be enforced.</p> <p>Where the footpath runs alongside the access road, Heras fencing will be installed to segregate pedestrians and vehicles.</p> <p>The works will be carried out in accordance with the Safety at Street Works and Road Works Code of Practice.</p>
1.16.28	Applicant	<p><b>Presentation of plan</b></p> <p><b>The Public Access and Rights of Way Plan [APP-033]</b> uses very similar colours to denote the public rights of way with access to be temporarily restricted and the Proposed Route from Immingham Docks to Construction Compounds. Please provide the plan with a clearer colour scheme.</p>	<p>A new colour scheme has been applied to the Access and Rights of Way Plan. An updated version of this plan (Revision B) has been submitted at Deadline 1 (<b>document reference 4.20</b>).</p>



**Table 17: Q.1.17 Waste and Minerals**

ExA-Q.1.17	Question to	Question	Applicant response
<b>Waste</b>			
1.17.1	Applicant Environment Agency Local Authorities JA Young Plastics	<p><b>JA Young Plastics</b></p> <p>The Applicant proposes business-specific mitigation in respect of the operations for <b>JA Young Plastics [APP-060, Table 18-4]</b>.</p> <p>1) To the EA and Local Authorities: are the mitigations proposed appropriate and robust, or are further measures required?</p> <p>2) To the Applicant: these mitigations are not readily apparent within the register under the <b>CEMP [APP-068]</b>. Where is this mitigation secured?</p> <p>3) To JA Young Plastics: provide any comments regarding the impacts upon your specific business operations as a result of the Proposed Development and whether or not the Applicant's mitigation would alleviate the concerns you have.</p>	<p>1) N/A</p> <p>2) ES Chapter 18: Materials and Waste <b>[APP-060]</b> Table 18-4 includes the following:  <i>“Permanent and significant impacts on the Autby House Materials Recycling Facility/JA Young Plastics/JAY PLAS are not anticipated; any impacts on site access would be of limited duration (during construction only). Pipeline road crossings would be by Auger Bore and no roads would be closed. Plant and materials would be moved from one side of the road to the other with a banksman controlling traffic who would stop construction vehicles if an emergency vehicle needed access. Access to the Autby House Materials Recycling Facility/JA Young Plastics would be maintained at all times, for emergency vehicle use, which forms mitigation item M18 (NOTE – This has been corrected to say M20 in Revision A version of the Draft CEMP submitted at Deadline 1 (document reference 6.4.3.1)) in the draft Mitigation Register within the Draft Construction Environmental Management Plan (CEMP).”</i></p> <p>There are therefore four mitigation measures set out in this table. These are as follows:</p> <ul style="list-style-type: none"> <li>• Use of trenchless techniques (auger bore) for the road crossings – the crossing schedule (ES Volume IV Appendix 3.2) <b>[APP-069]</b> identifies these crossings as auger bore crossings. However, to reinforce this approach, the need for these crossings to be trenchless has been added to measure H4 in ES Volume IV Appendix 3.1 Draft CEMP <b>[APP-068]</b>;</li> <li>• No road closures – this commitment is now included in measure H4 in the Draft CEMP;</li> <li>• Use of a banksman to stop control construction traffic if an emergency vehicle needed access – this measure has been added to measure M4 in the Draft CEMP]; and</li> <li>• Maintenance of access at all times - this is covered by measure H4 in the Draft CEMP.</li> </ul> <p>An updated version of the Draft CEMP (Revision A) has been provided by the Applicant at Deadline 1 <b>(document reference 6.4.3.1)</b>.</p>
1.17.2	Applicant	<p><b>Avoidance as embedded or additional mitigation</b></p> <p>The <b>ES [APP-060]</b> mentions the Conoco landfill and proximity of the Proposed Development to a Mineral Safeguarding Area. However, there are no commitments in the register of mitigation [APP-068] to avoid or micro-site around such features. Why is this not considered necessary?</p>	<p>The Conoco landfill would now be avoided as a result of the proposed change request 1, dated 19 March (reference document <b>[AS-038 to AS-054]</b>, as it related only to the option to route the pipeline through Phillips 66 operational land.</p> <p>The only minerals safeguarding areas crossed by the pipeline route are those within North East Lincolnshire Council's administrative boundary. Section 9.5.22 of ES Volume II Chapter 9 Geology and Hydrogeology <b>[APP-051]</b> states the following:  <i>“North East Lincolnshire Council are the mineral planning authority for Section 2 to Section 3 of the DCO Site Boundary. Reference to the NELC Local Plan 2013-2032 indicates there are several mineral safeguarding areas for Sands and Gravels within the DCO Site Boundary, predominantly between Riby and Grainsby. There are no records showing active extraction sites with 500m of the DCO Site Boundary.”</i></p> <p>The MSAs identified in the North East Lincolnshire Council area considered in the Planning, Design and Access Statement <b>[APP-129]</b> which confirms that avoidance of the MSAs through routing or micro-siting is not feasible. It is also not considered to be necessary, with section 7.25.11 of the Statement stating that:</p>

ExA-Q.1.17	Question to	Question	Applicant response
			<p><i>Despite a number of MSA's being allocated in NELC, there are no active mineral extraction sites or processing plants in the authority area. There is a lack of demand for land won sand and gravel which is reflected in the Local Plan, which states at paragraph 6.65 that:</i></p> <p><i>"The area features some mineral deposits of economic importance; however, no primary extraction occurs in the Borough. The Borough's role is limited to the production of secondary and recycled aggregates, and the importation and transportation of minerals through the Ports of Immingham and Grimsby."</i></p>
1.17.3	Applicant	<p><b>Material Required</b></p> <p>The <b>ES [APP-060]</b> gives information on some material use such as the required construction for the IAGI and TAGI, and temporary haul roads etc, but does not appear to provide a similar breakdown for any of the block valve stations, or the pipeline itself. The Applicant is requested to provide this information and consider whether it has any implications for the assessments undertaken.</p>	<p>ES Volume II Chapter 18: Materials and Waste <b>[APP-060]</b> does not provide a breakdown of material used to construct individual elements of the Proposed Development. It does, however, include the total material use for all aspects of the Proposed Development, drawing this information from the Bill of Quantities included as ES Volume IV Appendix 3-4 <b>[APP-071]</b>. However, as highlighted in the response to WQ 1.4.4, details about the Dune Isolation Valve were omitted from the Bill of Quantities and the calculation of material usage in Chapter 18 will therefore be updated and submitted to the ExA at Deadline 2.</p>
<b>Minerals</b>			
1.17.4	Applicant Lincolnshire County Council	<p><b>Extant minerals permissions</b></p> <p>In its relevant representation [RR-050], Lincolnshire County Council has stated the Proposed Development would conflict with restoration conditions on extant permissions at the Theddlethorpe end of the Order Limits.</p> <p>To Lincolnshire County Council: please set out fully the context and content of the conditions and the nature of the conflict identified. Then clarify to the ExA what bearing, if any, such matters should have on the ExA's recommendation.</p> <p>To Applicant: what information is known about the restoration conditions and is it considered that the Proposed Development would prohibit or otherwise prevent the objectives of restoration being realised?</p>	<p>The Applicant formerly operated the Theddlethorpe Gas Terminal under a range of planning permissions that were granted over the site. The Applicant is therefore aware of a condition within those planning permissions that required the land to be reinstated to agricultural use within such period as may be agreed with the planning authority, once the permitted use ceased and the infrastructure was decommissioned.</p> <p>The Proposed Development would include built infrastructure on the former TGT site. Option 1 of the Theddlethorpe Facility is located there. This would prevent any return to agricultural use in those areas. The Applicant considers that the consent granted in the DCO would supersede any requirement to re-instate those areas to agriculture, which is plainly inconsistent with the development that the draft DCO would authorise.</p> <p>The Applicant understands that for the remainder of the TGT site, the landowner would need to discuss with the planning authority what need there was to reinstate the land in accordance with historic planning conditions.</p>
1.17.5	Lincolnshire County Council	<p><b>Minerals Plan</b></p> <p>The Applicant reports that the Lincolnshire Minerals and Waste Local Plan was not adopted at the time of preparing the ES. Are there any updates in this regard?</p>	
1.17.6	Applicant Lincolnshire County Council	<p><b>Mineral Safeguarding Area (MSA)</b></p> <p>The Planning Design and Access Statement [APP-129] suggests there is an unavoidable conflict with an MSA, but because the land would become available for mineral working post-decommissioning, this counts as a temporary effect that is acceptable under policy.</p> <ol style="list-style-type: none"> <li>1) Applicant – provide a map showing the extent of the MSA, overlaid by the Order limits.</li> <li>2) Applicant – explain the likely pipeline routeing through the MSA and how it will be arranged to minimise the amount of mineral land sterilised for the duration and operation of the Proposed Development.</li> <li>3) Lincolnshire County Council – is the Council content with the level of assessment undertaken with regards to the MSA?</li> </ol>	<ol style="list-style-type: none"> <li>1) Figure MSA/01 (included in <b>Appendix H</b>) has been prepared to show the Mineral Safeguard Areas and Order Limits in North East Lincolnshire Council. The Order Limits do not interact with MSAs in North Lincolnshire or Lincolnshire County Council.</li> <li>2) The MSAs are typically orientated in the drainage pattern northeast / southwest and the pipeline route crosses these perpendicularly, which minimises the impact on the MSAs.</li> </ol>

ExA-Q.1.17	Question to	Question	Applicant response
		4) Lincolnshire County Council – for the purposes of planning policy, does the Council consider that the lifetime of the Proposed Development represents a ‘temporary’ sterilisation of the MSA?	
1.17.7	Applicant	<p><b>Disturbance to the MSA</b></p> <p>Can it be explicitly stated whether the owners of the MSA land have been consulted and are content with the level of interference with the MSA?</p>	<p>The owners of MSA land have been notified of the Proposed Development and consulted as part of the Statutory Consultation process as they are the owners of land within the draft order limits.</p> <p>Relevant representations from landowners have not included concerns regarding the interference with the MSA.</p>

Viking CCS Pipeline

**First Written Questions -  
Appendix A: Supporting  
Information for Written Question  
1.1.10**



# Viking CCS Pipeline

Deadline 1 Submission:  
The Net Zero Teesside Project  
Response to ExA WQ 1.1.10



## EXECUTIVE SUMMARY

This document has been prepared on behalf of Chrysaor Production (U.K.) Limited ('the Applicant'). It relates to the application ('the Application') for a Development Consent Order (DCO) that has been submitted to the Secretary of State for Energy Security & Net Zero under Section 37 of the Planning Act 2008 (the 'PA2008'). The Application relates to the Viking CCS Pipeline that will transport captured carbon dioxide from Immingham to the Theddlethorpe Facility, including a pipeline crossover to the existing Lincolnshire Offshore Gas Gathering System (LOGGS) offshore pipeline to Mean Low Water Springs (the 'Proposed Development').

This document provides the Applicant's response to question 1.1.10 of the Examining Authority's First Written Questions (ExQ1) **[PD-010]**: whether, following the Secretary of State's decision on 16 February 2024 to grant development consent for the Net Zero Teesside Project, the Applicant has anything to change, justify or comment upon in relation to the Application for the Proposed Development.

The Applicant notes in particular the query raised by the ExA in the course of Compulsory Acquisition Hearing 1 (CAH1) in relation to the determination of the application for the Net Zero Teesside Project in accordance with Section 104 of the PA2008. In addition, the Applicant notes the questions asked by the ExA at CAH1 regarding the inclusion of a Deemed Marine Licence within the DCO for the Net Zero Teesside Project, and on that project's approach to the consenting process for the offshore components of the wider carbon capture storage project.

Having reviewed in detail the Secretary of State's decision letter and the DCO (as made) for the Net Zero Teesside Project, the Applicant considers that there is a clear explanation for why that application was determined in accordance with Section 104 of the PA2008; namely, the inclusion of a nationally significant electricity generating station within the authorised development, and the terms of the Section 35 direction given by the Secretary of State in relation to the carbon capture storage elements. Those circumstances are specific to the Net Zero Teesside Project, and do not apply to the Application for the Proposed Development, which should properly be determined in accordance with Section 105 of the PA2008.

Likewise, the Applicant notes that there are also material differences between the Net Zero Teesside Project and the Application for the Proposed Development with regard to licensable marine activities. The development authorised by the Net Zero Teesside Project DCO includes some specific works to be carried out within the UK marine area, and the Deemed Marine Licences within the DCO relate to these licensable marine activities. Whilst the Applicant is seeking rights over the inter-tidal area in its draft DCO for the Proposed Development, no works within the UK marine area are proposed as part of the Proposed Development. No marine licence is therefore required.

Finally, the Applicant considers that its approach to the offshore consenting process is consistent with that taken on the Net Zero Teesside Project. The offshore elements of the Net Zero Teesside Project (i.e. an offshore pipeline and injection facility) were not included within the DCO application, and will be authorised through separate consenting and licensing regimes. The Applicant has adopted a similar approach in respect of the offshore elements of the Proposed Development. It already holds carbon dioxide appraisal and storage licences under the Energy Act 2008 and Storage of Carbon Dioxide (Licensing etc.) Regulations 2010, and will be progressing the consenting process for the offshore elements later in 2024.

## **1 OVERVIEW OF NET ZERO TEESSIDE PROJECT**

- 1.1 A DCO application for the Net Zero Teesside Project (Ref: EN010103) was submitted by the applicants, Net Zero Teesside Power Limited and Net Zero North Sea Storage Limited, to the Secretary of State for Business, Energy & Industrial Strategy on 19 July 2021.
- 1.2 The Net Zero Teesside Project is an electricity generating station, together with carbon capture, usage and storage, which comprises a number of elements, including:
- (a) A new gas-fired generating station with a generating capacity of up to 860MW, together with associated carbon capture plant and associated infrastructure;
  - (b) A high pressure natural gas pipeline to supply the generating station, together with associated infrastructure;
  - (c) A new electrical substation and an electrical export cable connection to this from the generating station, together with associated infrastructure;
  - (d) A water supply connection for the provision of water to the generating station and associated carbon capture plant;
  - (e) Wastewater disposal works in connection with the generating station and associated carbon capture plant;
  - (f) A carbon dioxide gathering network, comprising underground and overground pipelines for the transport of carbon dioxide;
  - (g) A high pressure carbon dioxide compression station, together with associated infrastructure;
  - (h) A high pressure carbon dioxide export pipeline corridor, comprising an overground and underground pipeline;
  - (i) Temporary construction and laydown areas; and
  - (j) Access and highway improvements.<sup>1 2</sup>
- 1.3 The application for the Net Zero Teesside Project was accepted for Examination on 16 August 2021, with this taking place between 10 May and 10 November 2022. On 16 February 2024 the Secretary of State for Energy Security & Net Zero granted development consent for the project.

## **2 DECISION-MAKING FRAMEWORK UNDER PA2008**

### Net Zero Teesside

- 2.1 The Applicant notes that the Secretary of State determined the application for the Net Zero Teesside Project in accordance with Section 104 of the PA2008, taking the view that national policy statements had effect in relation to the development.

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<sup>1</sup> Environmental Statement, Chapter 4: Proposed Development [AS-019], para 4.2.1

<sup>2</sup> The Net Zero Teesside Order 2024, Schedule 1

- 2.2 The justification for doing so is set out at length in the Planning Statement for the project,<sup>3</sup> as well as in the ExA's Recommendation Report<sup>4</sup> and in the Secretary of State's decision letter.<sup>5</sup>
- 2.3 These note that the element of the Net Zero Teesside Project that falls within the definition of a nationally significant infrastructure project for the purposes of Section 14(1) of the PA2008 is the new gas-fired generating station, as it has a generating capacity which exceeds the thresholds set in Section 15 of the PA2008.
- 2.4 The carbon dioxide gathering network, compression station and transport pipeline elements of the project were the subject of a request made in November 2019 for a direction by the Secretary of State under Section 35 of the PA2008. On 17 January 2020, the Secretary of State made a direction under Sections 35(1) and 35ZA of the PA2008 ("the S35 Direction") confirming that those elements of the Net Zero Teesside Project, together with any matters/development associated with them, are to be treated as development for which development consent is required "*in so far as they form part of the Net Zero Teesside Project which includes a generating station that is a nationally significant infrastructure project*".
- 2.5 Other aspects of the Net Zero Teesside Project, including the natural gas pipeline connection, new substation and electrical connection, water supply connection, wastewater disposal works, temporary construction and laydown areas, and the access and highway improvements, as well as the carbon capture plant for the generating station itself, were considered to be associated development for the purposes of Section 115 of the PA2008.
- 2.6 Both the ExA and the Secretary of State agreed with the applicants for the Net Zero Teesside Project that the 2011 National Policy Statements EN-1 and EN-2 had effect in relation to the generating station component of the project, together with its associated development, and that these elements should consequently be assessed and determined in accordance with Section 104 of the PA2008.
- 2.7 Moreover, noting that the S35 Direction directed in accordance with Sections 35ZA(3)(b) and (5) of the PA2008 that "*the Overarching Policy Statement for Energy (EN-1) has effect in relation to an application for development consent under this Direction in a manner appropriately equivalent so far as the considerations and impacts described in EN-1 are relevant to the proposed development*", the Secretary of State concluded that it could be given its intended effect, and that the application for the Net Zero Teesside Project could be determined in accordance with Section 104 of the PA2008.

#### Viking CCS Pipeline

- 2.8 It is clear, therefore, that the decision to determine the application for the Net Zero Teesside Project in accordance with Section 104 of the PA2008 was specific to the circumstances of that project; namely, the inclusion of a nationally significant electricity generating station within the authorised development, and the terms of the S35 Direction given in relation to the carbon capture storage elements.
- 2.9 Neither of these points are applicable or relevant to the Application for the Proposed Development. By contrast, the Proposed Development qualifies as a nationally significant infrastructure project by virtue of Section 14(1)(g) of the PA2008, being the construction

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<sup>3</sup> Planning Statement [REP1-003], paras 4.2.1 to 4.2.15

<sup>4</sup> Examining Authority's Report, paras 3.2.1 to 3.2.15

<sup>5</sup> Secretary of State's Decision Letter, paras 4.1 to 4.4 and para 7.2

of a pipe-line (other than by a gas transporter) which meets the thresholds set in Section 21 of the PA2008, together with associated development. This position is set out in further detail in the Planning Design and Access Statement for the Application [APP-129], and in the Explanatory Memorandum to the draft DCO [APP-007].

- 2.10 The Applicant's position on whether any national policy statements have effect in relation to the Proposed Development is more fully set out in its response to question 1.1.4 of ExQ1. In summary, the Applicant considers that no national policy statements have effect in relation to the Proposed Development, and that the Application should therefore be determined in accordance with Section 105 of the PA2008. The Applicant notes that the Secretary of State recently granted development consent for the HyNet carbon dioxide pipeline in March 2024 and determined that application in accordance with Section 105 of the PA2008.

### **3 DEEMED MARINE LICENCES**

#### Net Zero Teesside

- 3.1 The Applicant notes that the DCO as made for the Net Zero Teesside Project includes two Deemed Marine Licences, whilst also making clear that separate consent was required for the wider offshore elements of the overall NZT project.<sup>6</sup>
- 3.2 As the applicants for the Net Zero Teesside Project noted in their Planning Statement,<sup>7</sup> their DCO application covered works down to MLWS. Deemed Marine Licences were sought as part of the DCO for works below MHWS within the foreshore area and the tidal River Tees.
- 3.3 The Deemed Marine Licences included within the Net Zero Teesside Project DCO authorise the applicants to undertake licensable marine activities within the meaning of Section 66 of the Marine and Coastal Access Act 2009 insofar as these form part of, or are related to, the development authorised by the DCO. This includes:
- (a) As part of their wastewater disposal works, to form a new water discharge pipeline to the Tees Bay, including (i) the construction of a micro-bored tunnel, (ii) dredging to facilitate the removal of material from the seabed, (iii) disposal of dredge arisings, (iv) installation of a pipeline, (v) establishment of a connection point for and emplacement of a discharge head, (vi) the deposit of rock armour protection, (vii) construction works, and (viii) the inspection, removal and detonation of unexploded ordnance.
  - (b) As part of their high pressure carbon dioxide export pipeline corridor, to (i) carry out horizontal direction drilling and associated works, (ii) grouting, sealing and jointing activities to install the pipeline, (iii) construct a pipeline end-piece to provide temporary prevention from ingress, (iv) install fibre-optic and power cables, and (v) carry out inspection, removal or detonation for exploded ordnance.

#### Viking CCS Pipeline

- 3.4 With regard to the Application for the Proposed Development, whilst part of the LOGGS pipeline between MHWS and MLWS is included within the Order Limits, no works within the inter-tidal area are proposed as part of the development authorised by the draft DCO. As the authorised development does not include any licensable marine activity, the

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<sup>6</sup> The Net Zero Teesside Order 2024, Schedules 10 and 11

<sup>7</sup> Planning Statement [REP1-003], para 4.5.16



Applicant considers that there is no need for the draft DCO to include a Deemed Marine Licence in terms of Section 149A of the PA2008.

- 3.5 Finally, as the applicants for the Net Zero Teesside Project noted in their Other Consents and Licences document,<sup>8</sup> a Marine Licence would still be required for the offshore elements of the wider carbon capture storage project. The Other Consents and Licences document notes that a Marine Licence for offshore works below MHWS not covered by the Deemed Marine Licences within the DCO had not yet been progressed as at Deadline 11 of the Examination. The Applicant will similarly be progressing separate applications for the offshore elements of the wider Viking CCS Project, in line with the approach taken for the Net Zero Teesside Project.

#### **4 APPROACH TO OFFSHORE CONSENTING**

##### Net Zero Teesside

- 4.1 The Applicant notes that, with the exception of the works discussed above, the offshore elements of the Net Zero Teesside Project have been progressed as part of a separate consenting process to the DCO application.
- 4.2 As the applicants for the Net Zero Teesside Project note in their Other Consents and Licences document:<sup>9</sup>

*“The electricity generating station, its post-combustion carbon capture plant and the CO<sub>2</sub> compressor station will be located on part of the STDC Teesworks area (on part of the former Redcar Steel Works Site). The CO<sub>2</sub> export pipeline will also start in this location before heading offshore. The generating station connections and the CO<sub>2</sub> gathering network will require corridors of land within both Redcar and Stockton-on-Tees, including crossings beneath the River Tees.*

*All of the above elements are included in the scope of the DCO Application, with the exception of the CO<sub>2</sub> export pipeline, where only the onshore section of pipeline above MLWS is included. The CO<sub>2</sub> export pipeline below MLWS and the CO<sub>2</sub> storage site under the North Sea (the Endurance saline aquifer) will be the subject of separate consent applications, including under the Petroleum Act 1998 and the Energy Act 2008. These applications will be supported by an Offshore Environmental Statement.”*

- 4.3 The ExA for the Net Zero Teesside Project raised questions at Issue Specific Hearing 1 and in their First Written Questions as to why the offshore elements of the wider carbon capture storage project were not included within the DCO application.<sup>10</sup> In response, the applicants outlined that the offshore elements would require four main consents:
- (a) A carbon dioxide appraisal and storage licence from the North Sea Transition Authority (‘the NSTA’) under Section 18 of the Energy Act 2008;
  - (b) A carbon dioxide storage permit from the NSTA under Regulations 6 to 8 of the Storage of Carbon Dioxide (Licensing etc.) Regulations 2010;
  - (c) Authorisation for the construction or use of offshore pipelines from the NSTA under Section 14 of the Petroleum Act 1998; and

<sup>8</sup> Other Consents and Licences [REP11-004], Table 2.2

<sup>9</sup> Other Consents and Licences [REP11-004], paras 1.2.3 to 1.2.4

<sup>10</sup> Examining Authority’s Report, para 5.2.43 to 5.2.46

- (d) Consent for the geological storage of carbon dioxide from the Offshore Petroleum Regulator for Environment and Decommissioning ('OPRED'), on behalf of the Secretary of State, in terms of the Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020.
- 4.4 At the close of Examination, the Applicant understands that the applicants for the Net Zero Teesside Project had obtained a carbon dioxide appraisal and storage licence from the NSTA, but were yet to submit applications in respect of the other consents listed above.
- 4.5 The applicants for the Net Zero Teesside Project considered that the carbon dioxide storage permit from the NSTA, as well as EIA consent from OPRED, could not be brought within the scope of the DCO application, as these are not prescribed consents or authorisations in terms of Section 150 of the PA2008 and the Infrastructure Planning (Interested Parties and Miscellaneous Prescribed Provisions) Regulations 2015. Of the outstanding consents listed above, only authorisation for the construction and use of offshore pipelines under Section 14 of the Petroleum Act 1998 could (with the consent of the NSTA) have been included in the DCO.
- 4.6 The position of the applicants for the Net Zero Teesside Project was that there was an obvious benefit in one decision-maker (the NSTA) dealing with the offshore elements of the project together. Splitting the assessment and decision-making in respect of the offshore elements would, in their view, offer no clear public interest benefits.
- 4.7 The ExA considered the applicants' approach to the offshore consenting process to be "*entirely reasonable in the context of the PA2008 regime*",<sup>11</sup> a conclusion with which the Secretary of State agreed.<sup>12</sup>

#### Viking CCS Pipeline

- 4.8 The Applicant broadly agrees with the approach taken by the applicants for the Net Zero Teesside Project, and with the conclusions reached by the ExA and Secretary of State. Like the applicants for the Net Zero Teesside Project, the Applicant has already obtained carbon dioxide appraisal and storage licences, with these being granted by the NSTA prior to submission of the Application for the Proposed Development. Copies of these licences are submitted in Appendix D to the Applicant's response to the ExA's first written questions.
- 4.9 As the Applicant already holds carbon dioxide appraisal and storage licences from the NSTA, it would have been neither reasonable nor practicable for the Applicant to have sought to disapply the requirement to obtain such a licence under Section 18 of the Energy Act 2008 within the draft DCO.
- 4.10 The carbon dioxide storage permit will be a consent granted under the carbon dioxide appraisal and storage licences held by the Applicant, authorising the use of a place within the licence areas as a storage site.<sup>13</sup> The Applicant will apply for the permit in accordance with the conditions of its licences, the provisions of the Storage of Carbon Dioxide (Licensing etc.) Regulations 2010, and the detailed application guidance prepared by the NSTA.<sup>14</sup> The Applicant considers its approach in this respect to be consistent with that taken by the applicants for the Net Zero Teesside Project.

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<sup>11</sup> Examining Authority's Report, para 5.2.126

<sup>12</sup> Secretary of State's Decision Letter, para 4.13

<sup>13</sup> Storage of Carbon Dioxide (Licensing etc.) Regulations 2010, Regulation 1(3)

<sup>14</sup> North Sea Transition Authority, 'Guidance on Applications for a Carbon Storage Permit' (November 2023) and 'Guidance on the content of an Offshore Carbon Storage Permit Application' (March 2024)

- 4.11 As the Applicant notes in its Bridging Document [APP-128], it will submit an Environmental Statement for the offshore elements of the project to OPRED in accordance with the provisions of the Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020. Due to project timescales, the Applicant does not anticipate being in a position to submit this to OPRED until after the close of Examination.
- 4.12 The Applicant therefore considers this approach to be consistent with that taken on the Net Zero Teesside Project, and on other carbon capture storage DCO applications (e.g. HyNet). The Applicant is not aware of the Environmental Statement for the offshore elements of the Net Zero Teesside Project having been provided to the ExA during the course of the Examination, although it notes that an undated draft copy of the Offshore Environmental Statement was provided to the Secretary of State on 7 August 2023, in response to a request for further information dated 16 May 2023. Likewise, the Applicant notes that the Offshore Environmental Statement for the Hynet Carbon Dioxide Transportation and Storage Project was submitted to OPRED on 27 February 2024, shortly before the Secretary of State granted development consent for the onshore elements of the project on 20 March 2024.

## **5 CONCLUSION**

- 5.1 The Applicant has carefully considered the Secretary of State's decision on the Net Zero Teesside Project application, as well as the terms of the DCO as made for that project.
- 5.2 Whilst the Applicant recognises that there are similarities between the Net Zero Teesside Project and the Proposed Development, in that both schemes involve the transport and storage of captured carbon dioxide, it nevertheless considers that there are some notable differences between that project and the Proposed Development.
- 5.3 In particular, as the nationally significant infrastructure project underpinning the Net Zero Teesside Project was a new gas-fired electricity generating station, with the carbon dioxide gathering network, compression station and transport pipeline elements of the project treated as development for which development consent was required, it was appropriate for that particular application to be determined in accordance with Section 104 of the PA2008. This does not alter the Applicant's view that the Proposed Development ought properly to be determined in accordance with Section 105.
- 5.4 Likewise, as the development authorised by the Net Zero Teesside Project DCO included works below MHWS within the foreshore area and the tidal River Tees, it was appropriate for that DCO to include Deemed Marine Licences in respect of those licensable marine activities. As no such works are proposed as part of the Application, the Applicant does not consider there to be a need to include a Deemed Marine Licence within the draft DCO for the Proposed Development.
- 5.5 The Applicant notes the approach taken towards the consenting of the offshore elements of the Net Zero Teesside Project mirror those taken for the Proposed Development. The appellant notes the position followed by the applicants, the ExA and the Secretary of State with regard to the offshore consenting process, and considers that it has adopted a consistent approach to the offshore elements associated with the Proposed Development. Like the applicants for the Net Zero Teesside Project, the Applicant has already obtained the necessary carbon dioxide appraisal and storage licences from the NSTA, and will progress applications for the remaining offshore authorisations through the relevant consenting and licensing regimes.

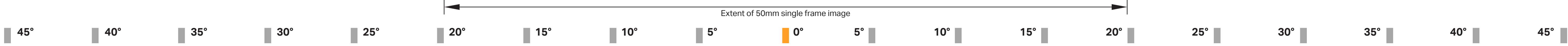
Viking CCS Pipeline

**First Written Questions -  
Appendix B: Supporting  
Information for Written Question  
1.1.13**





BASELINE (WINTER)



**AECOM** Delivering a better world

Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 22/03/2023, 14:57

Camera: Canon EOS 6D  
 Lens: Canon EF50mm f/1.8 STM  
 Horizontal Field of View: 90°  
 Direction of View: South  
 Location: E526289, N400343

Eye level: 22.9m  
 Height of Camera: 1.6m

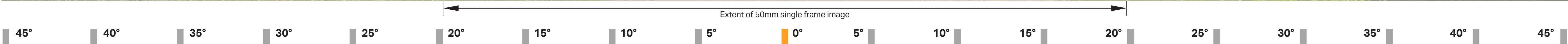
**Note:**  
 Images to be viewed at a comfortable arm's length.

Figure 32 Viewpoint Photomontages - Viking CCS  
 Pipeline Viewpoint 10: Thoroughfare, Ashby cum Fenby





BASELINE (SUMMER)



Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 29/06/2023, 14:46

Camera: Nikon D700  
 Lens: Nikon 50mm f/1.4  
 Horizontal Field of View: 90°  
 Direction of View: South  
 Location: E526290, N402810

Eye level: 22.9m  
 Height of Camera: 1.6m

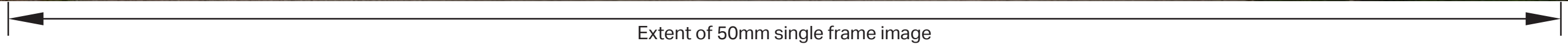
**Note:**  
 Images to be viewed at a comfortable arm's length.

Figure 33 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 10: Thoroughfare, Ashby cum Fenby





PROPOSED (YEAR 1)



Delivering a better world  
 Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 22/03/2023, 14:57

Camera: Canon EOS 6D  
 Lens: Canon EF50mm f/1.8 STM  
 Horizontal Field of View: 90°  
 Direction of View: South  
 Location: E526289, N400343

Eye level: 22.9m  
 Height of Camera: 1.6m

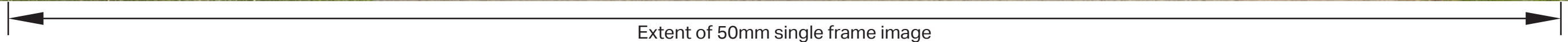
**Note:**  
 Images to be viewed at a comfortable arm's length.

Figure 34 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 10: Thoroughfare, Ashby cum Fenby





PROPOSED (YEAR 15)



Delivering a better world

Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 29/06/2023, 14:46

Camera: Nikon D700  
 Lens: Nikon 50mm f/1.4  
 Horizontal Field of View: 90°  
 Direction of View: South  
 Location: E526290, N402810

Eye level: 22.9m  
 Height of Camera: 1.6m

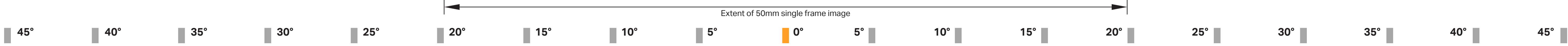
**Note:**  
 Images to be viewed at a comfortable arm's length.

Figure 35 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 10: Thoroughfare, Ashby cum Fenby





BASELINE (WINTER)



**AECOM** Delivering a better world

Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 22/03/2023, 13:57

Camera: Nikon D700  
 Lens: Nikon 50mm f/1.4  
 Horizontal Field of View: 90°  
 Direction of View: West  
 Location: E536218, N390514

Eye level: 8.0m  
 Height of Camera: 1.6m

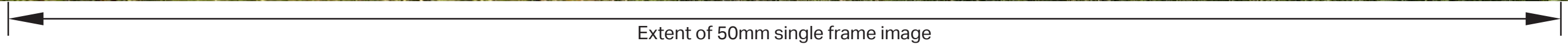
**Note:**  
 Images to be viewed at a comfortable arm's length.

Figure 36 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 22: Cherry Tree Lane/PRoW, Alvingham





BASELINE (SUMMER)



**AECOM** Delivering a better world

Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 22/06/2023, 11:25

Camera: Canon EOS 6D  
 Lens: Canon EF50mm f/1.8 STM  
 Horizontal Field of View: 90°  
 Direction of View: West  
 Location: E536224, N390522

Eye level: 8.0m  
 Height of Camera: 1.6m

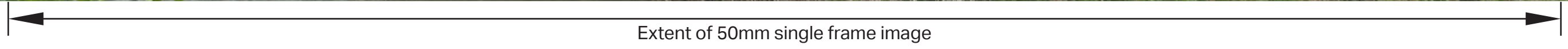
**Note:**  
 Images to be viewed at a comfortable arm's length.

Figure 37 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 22: Cherry Tree Lane/PRoW, Alvingham





PROPOSED (YEAR 1)



**AECOM** Delivering a better world

Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 22/03/2023, 13:57

Camera: Nikon D700  
 Lens: Nikon 50mm f/1.4  
 Horizontal Field of View: 90°  
 Direction of View: West  
 Location: E536218, N390514

Eye level: 8.0m  
 Height of Camera: 1.6m

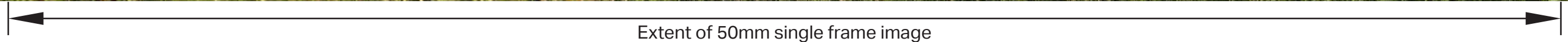
**Note:**  
 Images to be viewed at a comfortable arm's length.

Figure 38 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 22: Cherry Tree Lane/PRoW, Alvingham





PROPOSED (YEAR 15)



Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 22/06/2023, 11:25

Camera: Canon EOS 6D  
 Lens: Canon EF50mm f/1.8 STM  
 Horizontal Field of View: 90°  
 Direction of View: West  
 Location: E536224, N390522

Eye level: 8.0m  
 Height of Camera: 1.6m

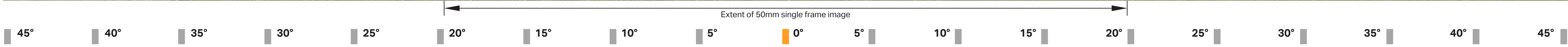
**Note:**  
 Images to be viewed at a comfortable arm's length.

Figure 39 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 22: Cherry Tree Lane/PRoW, Alvingham





BASELINE (WINTER)



Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 22/03/2023, 12:34

Camera: Nikon D700  
 Lens: Nikon 50mm f/1.4  
 Horizontal Field of View: 90°  
 Direction of View: South  
 Location: E548002, N388402

Eye level: 3.6m  
 Height of Camera: 1.6m

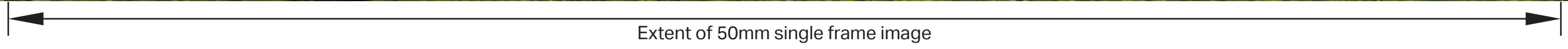
**Note:**  
 Images to be viewed at a comfortable arm's length.

Figure 40 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 27: PRoW 252 off Mablethorpe Road A1031





BASELINE (SUMMER)



45° 40° 35° 30° 25° 20° 15° 10° 5° 0° 5° 10° 15° 20° 25° 30° 35° 40° 45°



Delivering a better world

Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 22/06/2023, 09:37

Camera: Canon EOS 6D  
 Lens: Canon EF50mm f/1.8 STM  
 Horizontal Field of View: 90°  
 Direction of View: South  
 Location: E548006, N388489

Eye level: 3.6m  
 Height of Camera: 1.6m

**Note:**  
 Images to be viewed at a comfortable arm's length.

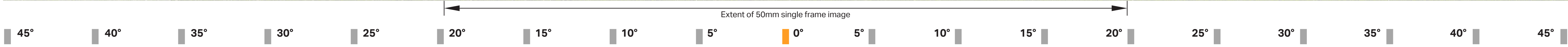
Figure 41 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 27: PRoW 252 off Mablethorpe Road A1031





KEY:  
 Red - Visible  
 Blue - Not Visible

WIRELINE (OPTION 1)



Delivering a better world

Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 22/03/2023, 12:34

Camera: Nikon D700  
 Lens: Nikon 50mm f/1.4  
 Horizontal Field of View: 90°  
 Direction of View: South  
 Location: E548002, N388402

Eye level: 3.6m  
 Height of Camera: 1.6m

**Note:**  
 Images to be viewed at a comfortable arm's length.

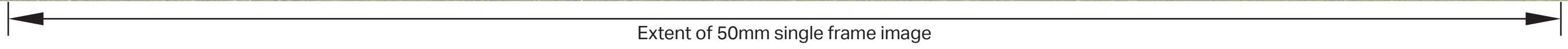
Figure 42 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 27: PRoW 252 off Mablethorpe Road A1031





KEY:  
 Red - Visible  
 Blue - Not Visible

WIRELINE (OPTION 2)



45° 40° 35° 30° 25° 20° 15° 10° 5° 0° 5° 10° 15° 20° 25° 30° 35° 40° 45°



Delivering a better world  
 Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 22/03/2023, 12:34

Camera: Nikon D700  
 Lens: Nikon 50mm f/1.4  
 Horizontal Field of View: 90°  
 Direction of View: South  
 Location: E548002, N388402

Eye level: 3.6m  
 Height of Camera: 1.6m

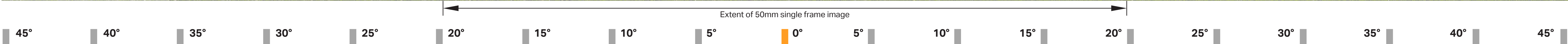
**Note:**  
 Images to be viewed at a comfortable arm's length.

Figure 43 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 27: PRoW 252 off Mablethorpe Road A1031





PROPOSED (YEAR 1) (OPTION 2)



Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 22/03/2023, 12:34

Camera: Nikon D700  
 Lens: Nikon 50mm f/1.4  
 Horizontal Field of View: 90°  
 Direction of View: South  
 Location: E548002, N388402

Eye level: 3.6m  
 Height of Camera: 1.6m

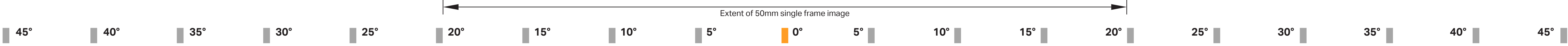
**Note:**  
 Images to be viewed at a comfortable arm's length.

Figure 44 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 27: PRoW 252 off Mablethorpe Road A1031





BASELINE (SUMMER)



Delivering a better world

Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 29/06/2023, 16:03

Camera: Nikon D700  
 Lens: Nikon 50mm f/1.4  
 Horizontal Field of View: 90°  
 Direction of View: South  
 Location: E548590, N387915

Eye level: 4.1m  
 Height of Camera: 1.6m

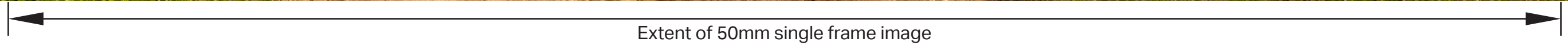
**Note:**  
 Images to be viewed at a comfortable arm's length.

Figure 45 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 30: England coat Path, Brook Bank PRow





PROPOSED (YEAR 1)



45° 40° 35° 30° 25° 20° 15° 10° 5° 0° 5° 10° 15° 20° 25° 30° 35° 40° 45°



Delivering a better world

Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 29/06/2023, 16:03

Camera: Nikon D700  
 Lens: Nikon 50mm f/1.4  
 Horizontal Field of View: 90°  
 Direction of View: South  
 Location: E548590, N387915

Eye level: 4.1m  
 Height of Camera: 1.6m

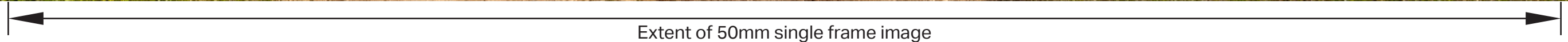
**Note:**  
 Images to be viewed at a comfortable arm's length.

Figure 46 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 30: England coat Path, Brook Bank PRow





PROPOSED (YEAR 15)



Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 29/06/2023, 16:03

Camera: Nikon D700  
 Lens: Nikon 50mm f/1.4  
 Horizontal Field of View: 90°  
 Direction of View: South  
 Location: E548590, N387915

Eye level: 4.1m  
 Height of Camera: 1.6m

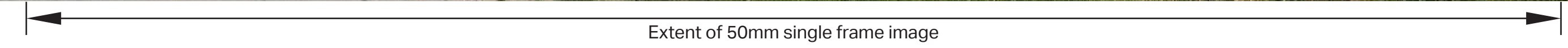
**Note:**  
 Images to be viewed at a comfortable arm's length.

Figure 47 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 30: England coat Path, Brook Bank PRow





BASELINE (SUMMER)



Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 22/06/2023, 14:17

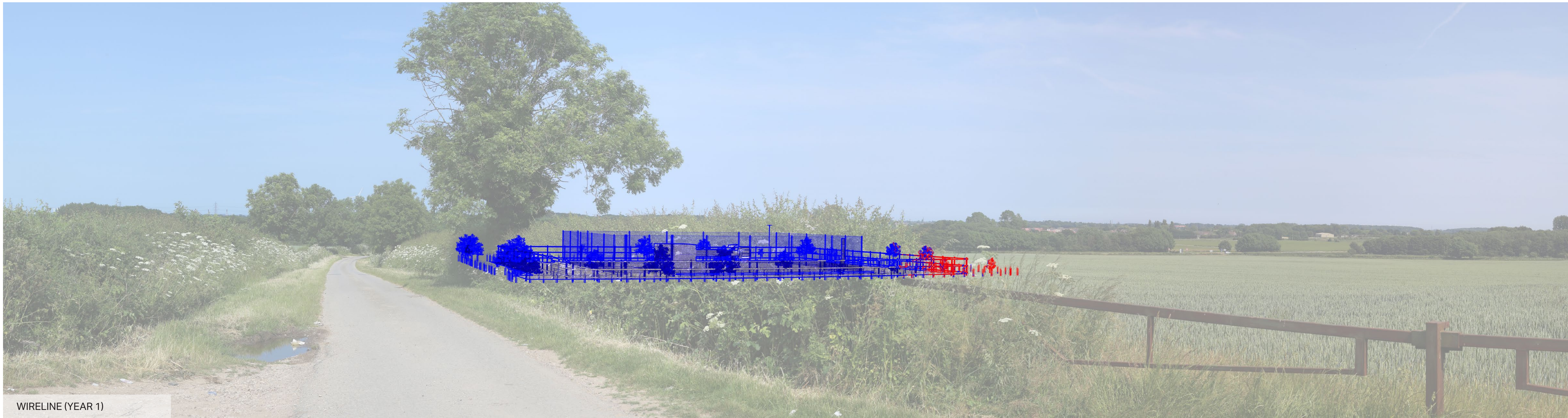
Camera: Canon EOS 6D  
 Lens: Canon EF50mm f/1.8 STM  
 Horizontal Field of View: 90°  
 Direction of View: North East  
 Location: E519373, N396147

Eye level: 38.8m  
 Height of Camera: 1.6m

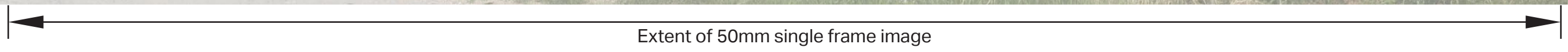
**Note:**  
 Images to be viewed at a comfortable arm's length.

Figure 48 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 31: Washingdales Lane





WIRELIN (YEAR 1)



Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 22/06/2023, 14:17

Camera: Canon EOS 6D  
 Lens: Canon EF50mm f/1.8 STM  
 Horizontal Field of View: 90°  
 Direction of View: North East  
 Location: E519373, N396147

Eye level: 38.8m  
 Height of Camera: 1.6m

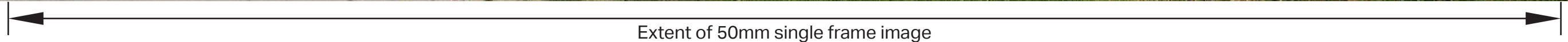
**Note:**  
 Images to be viewed at a comfortable arm's length.

Figure 49 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 31: Washingdales Lane





PROPOSED (YEAR 1)



Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 22/06/2023, 14:17

Camera: Canon EOS 6D  
 Lens: Canon EF50mm f/1.8 STM  
 Horizontal Field of View: 90°  
 Direction of View: North East  
 Location: E519373, N396147

Eye level: 38.8m  
 Height of Camera: 1.6m

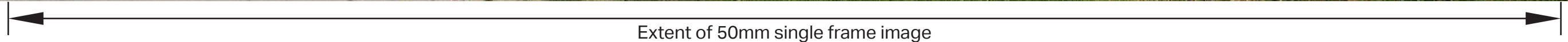
**Note:**  
 Images to be viewed at a comfortable arm's length.

Figure 50 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 31: Washingdales Lane





PROPOSED (YEAR 15)



Delivering a better world  
 Visualisation Type: 3  
 Projection: Cylindrical  
 Enlargement Factor: 96%  
 Paper Size: A1  
 Date / Time: 22/06/2023, 14:17

Camera: Canon EOS 6D  
 Lens: Canon EF50mm f/1.8 STM  
 Horizontal Field of View: 90°  
 Direction of View: North East  
 Location: E519373, N396147

Eye level: 38.8m  
 Height of Camera: 1.6m

**Note:**  
 Images to be viewed at a comfortable arm's length.

Figure 51 Viewpoint Photomontages - Viking CCS Pipeline  
 Viewpoint 31: Washingdales Lane





FIGURE TITLE

3-D Block Valve  
Station

ISSUE PURPOSE

PROJECT NUMBER / REFERENCE

60668955 / VCCS\_240411



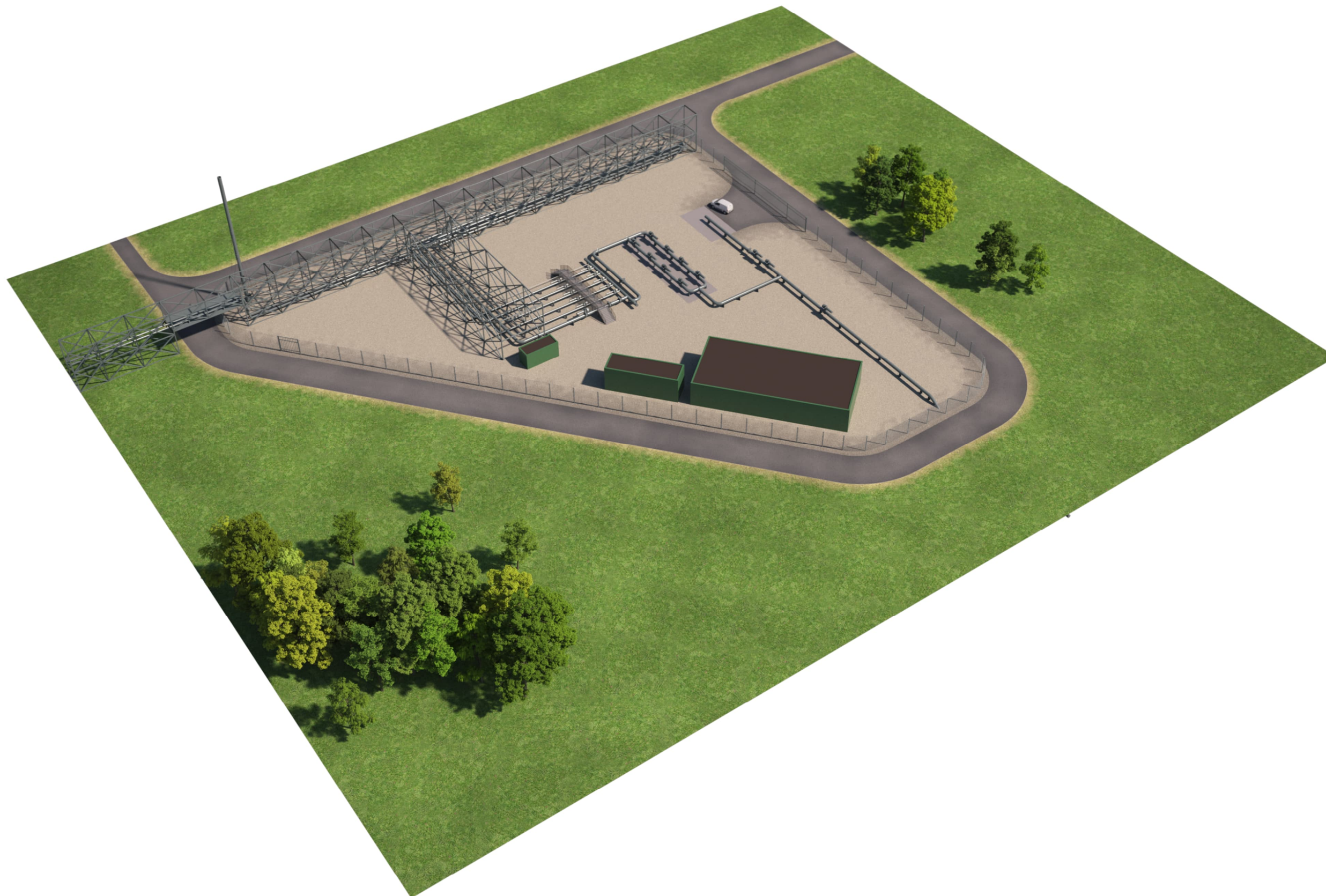


FIGURE TITLE

3-D view of  
Immingham  
Facility

ISSUE PURPOSE

PROJECT NUMBER / REFERENCE

60668955 / VCCS\_240411\_



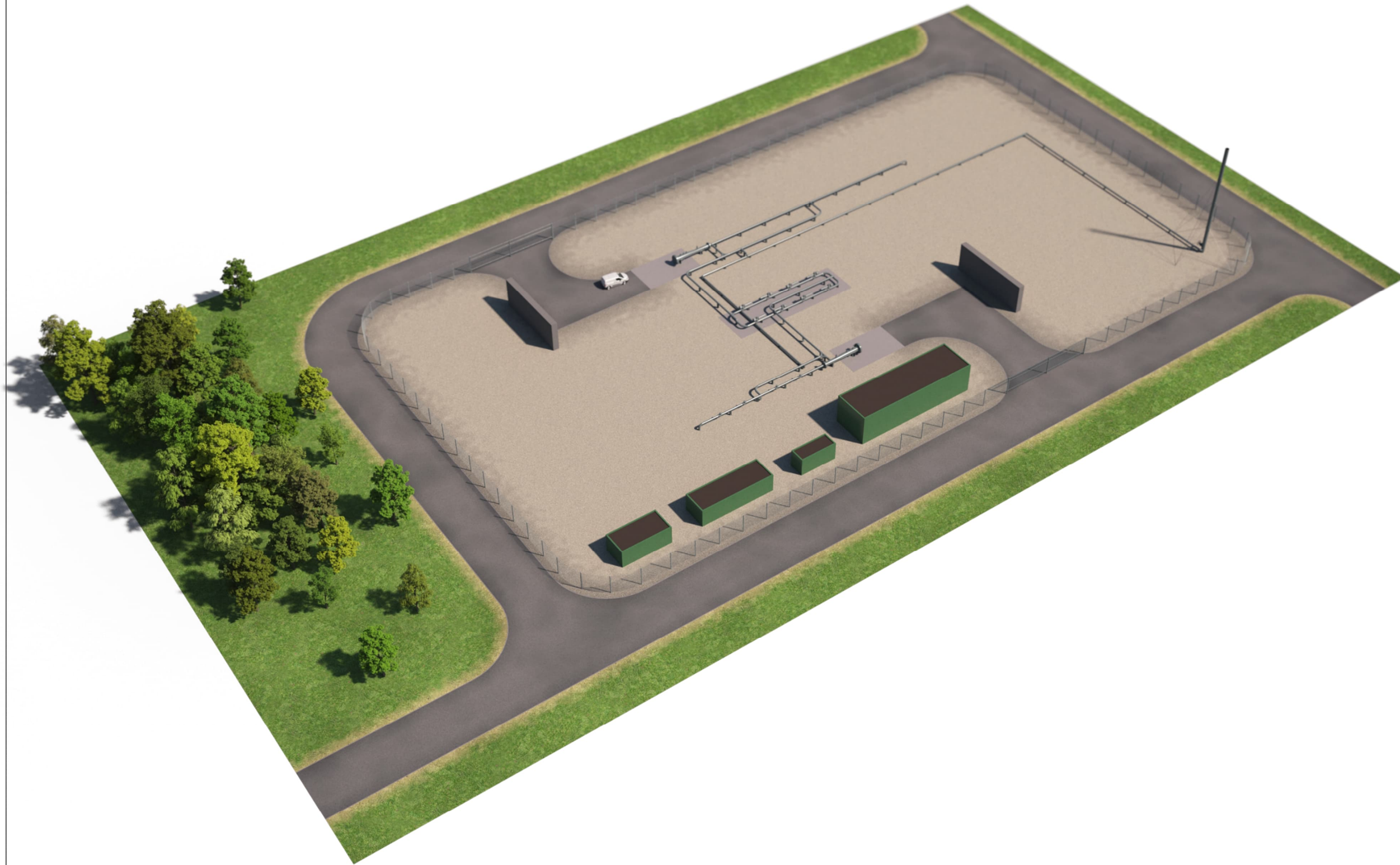


FIGURE TITLE

3-D view of  
Theddlethorpe  
Facility

ISSUE PURPOSE

PROJECT NUMBER / REFERENCE

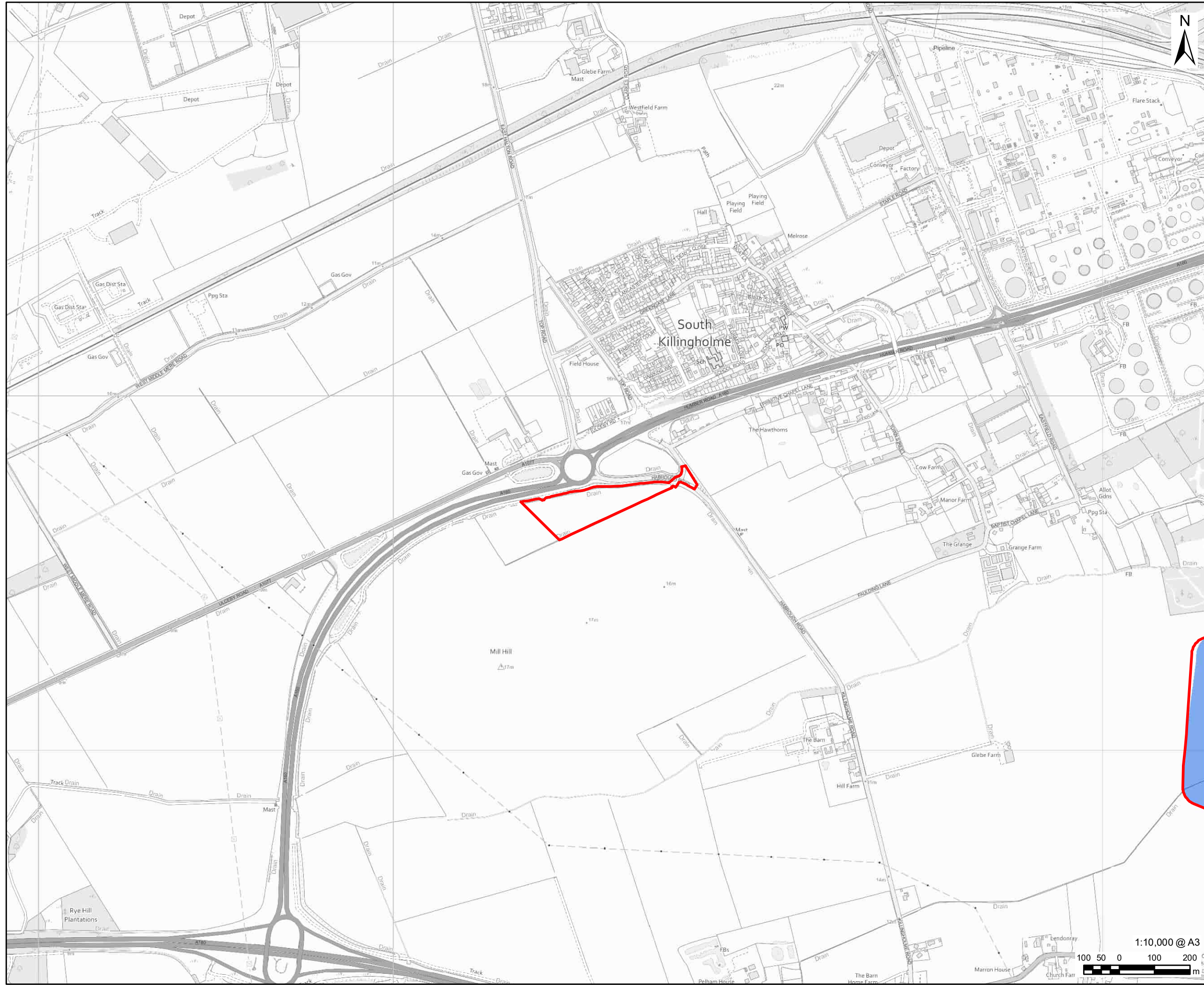
60668955 / VCCS\_240411



Viking CCS Pipeline

**First Written Questions -  
Appendix C: Supporting  
Information for Written Question  
1.1.18**





LEGEND

- Order Limits
- Indicative Limits of Deviation

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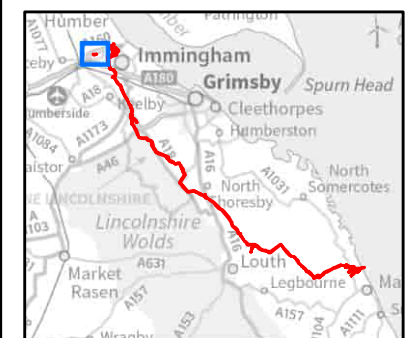
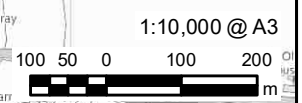


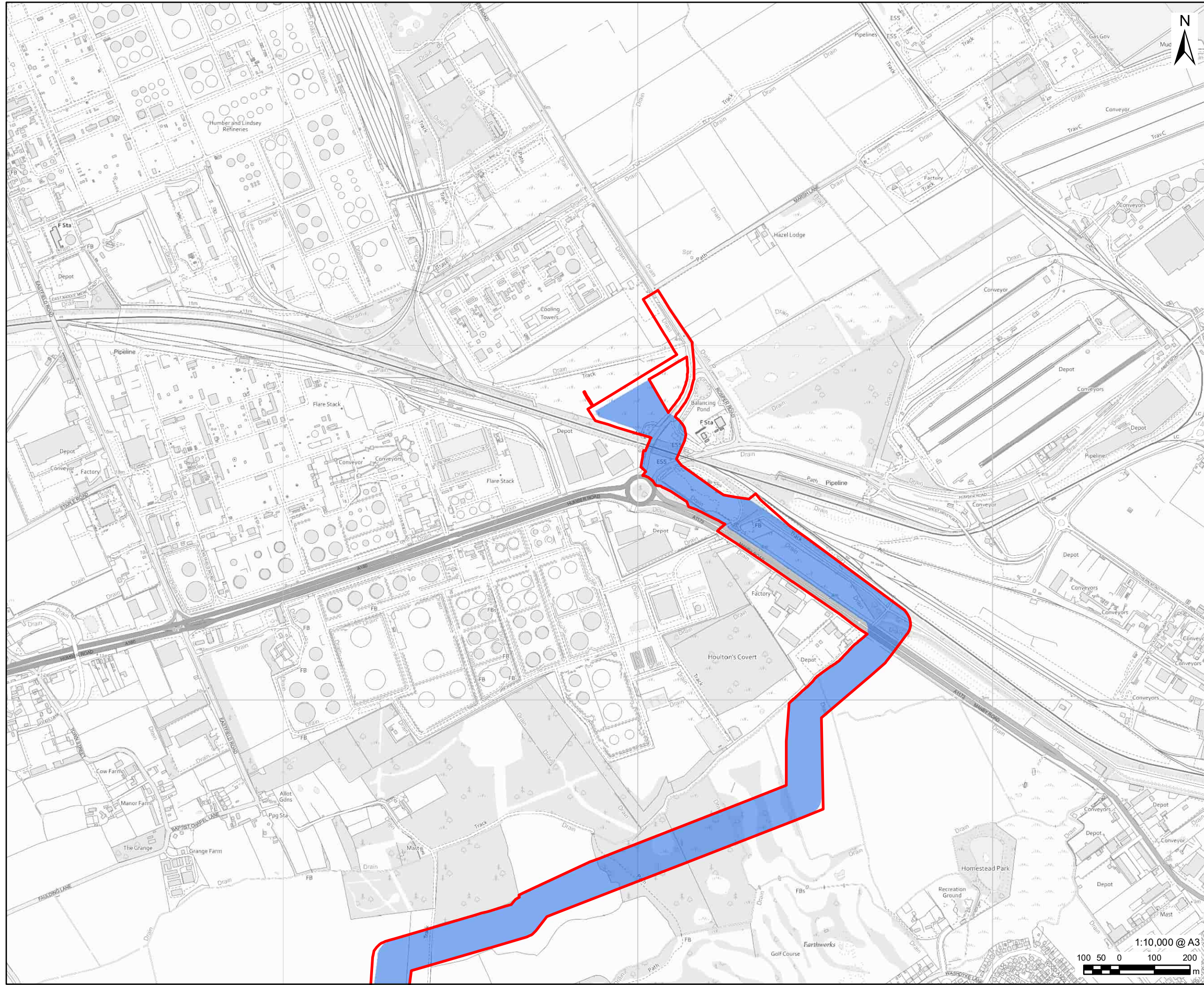
FIGURE TITLE  
**Indicative Limits of Deviation**

ISSUE PURPOSE  
FOR INFORMATION  
PROJECT NUMBER / REFERENCE  
60668955 / VCCS\_240425\_P81



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VikingCCS

**AECOM**

PROJECT

**Viking CCS Pipeline**

LEGEND

- Order Limits
- Indicative Limits of Deviation

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**FIGURE TITLE**

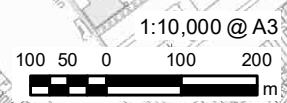
**Indicative Limits of Deviation**

**ISSUE PURPOSE**

FOR INFORMATION

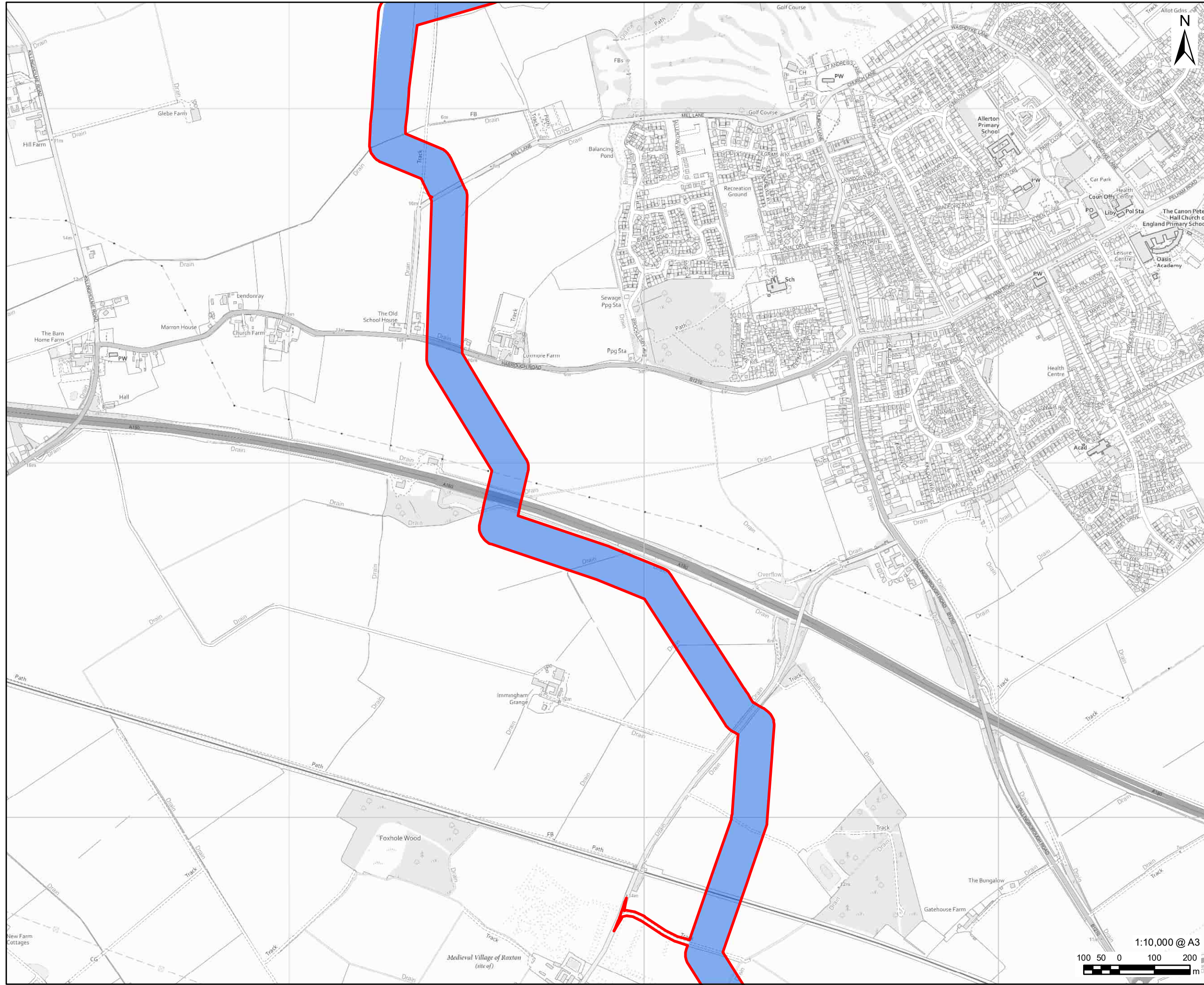
**PROJECT NUMBER / REFERENCE**

60668955 / VCCS\_240425\_P81



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LEGEND

- Order Limits
- Indicative Limits of Deviation

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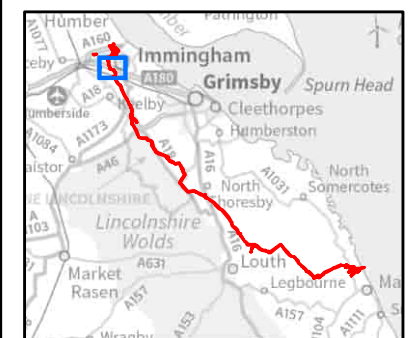
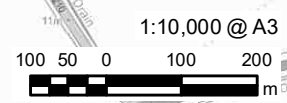


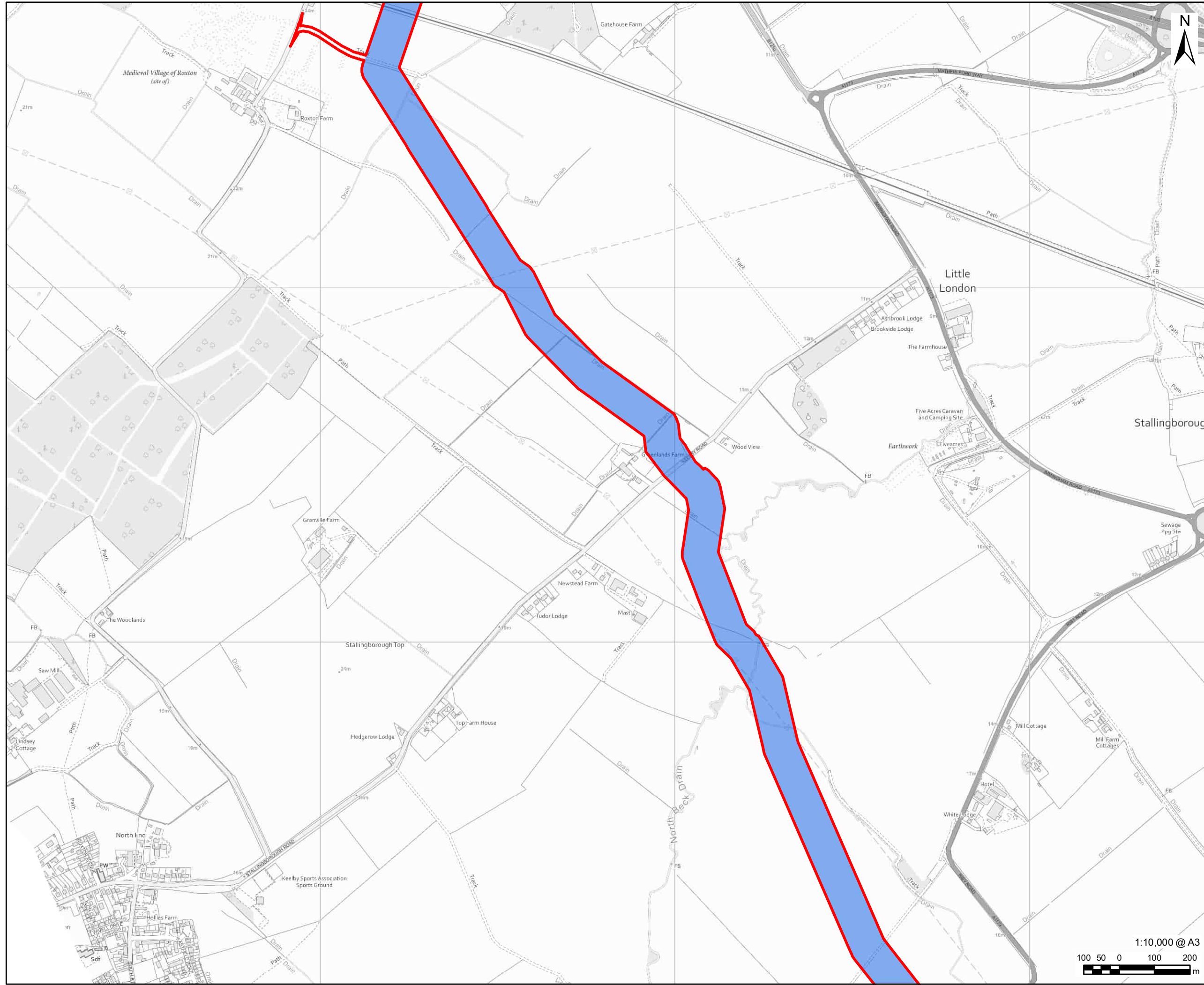
FIGURE TITLE  
 Indicative Limits of Deviation

ISSUE PURPOSE  
 FOR INFORMATION  
 PROJECT NUMBER / REFERENCE  
 60668955 / VCCS\_240425\_P81



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LEGEND

- Order Limits
- Indicative Limits of Deviation

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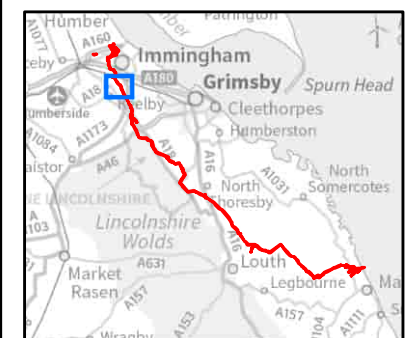
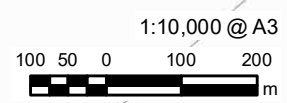
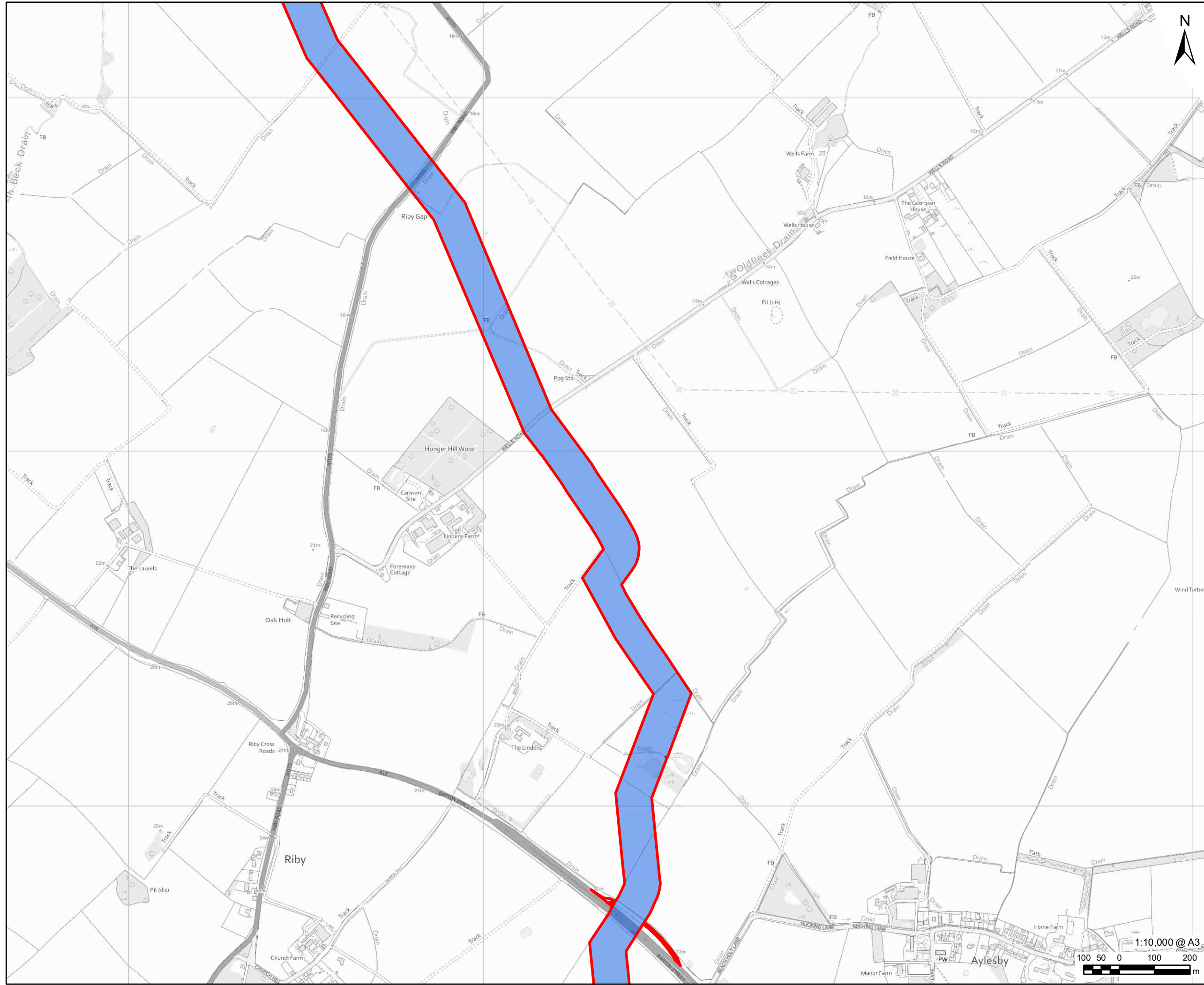


FIGURE TITLE  
**Indicative Limits of Deviation**



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LEGEND

- Order Limits
- Indicative Limits of Deviation

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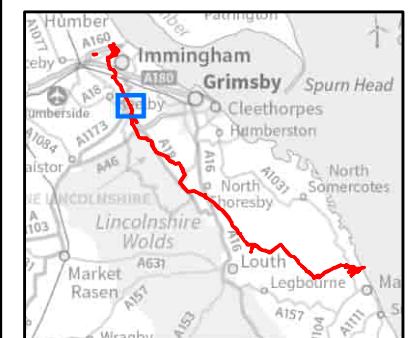
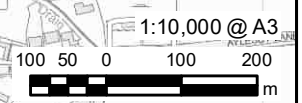


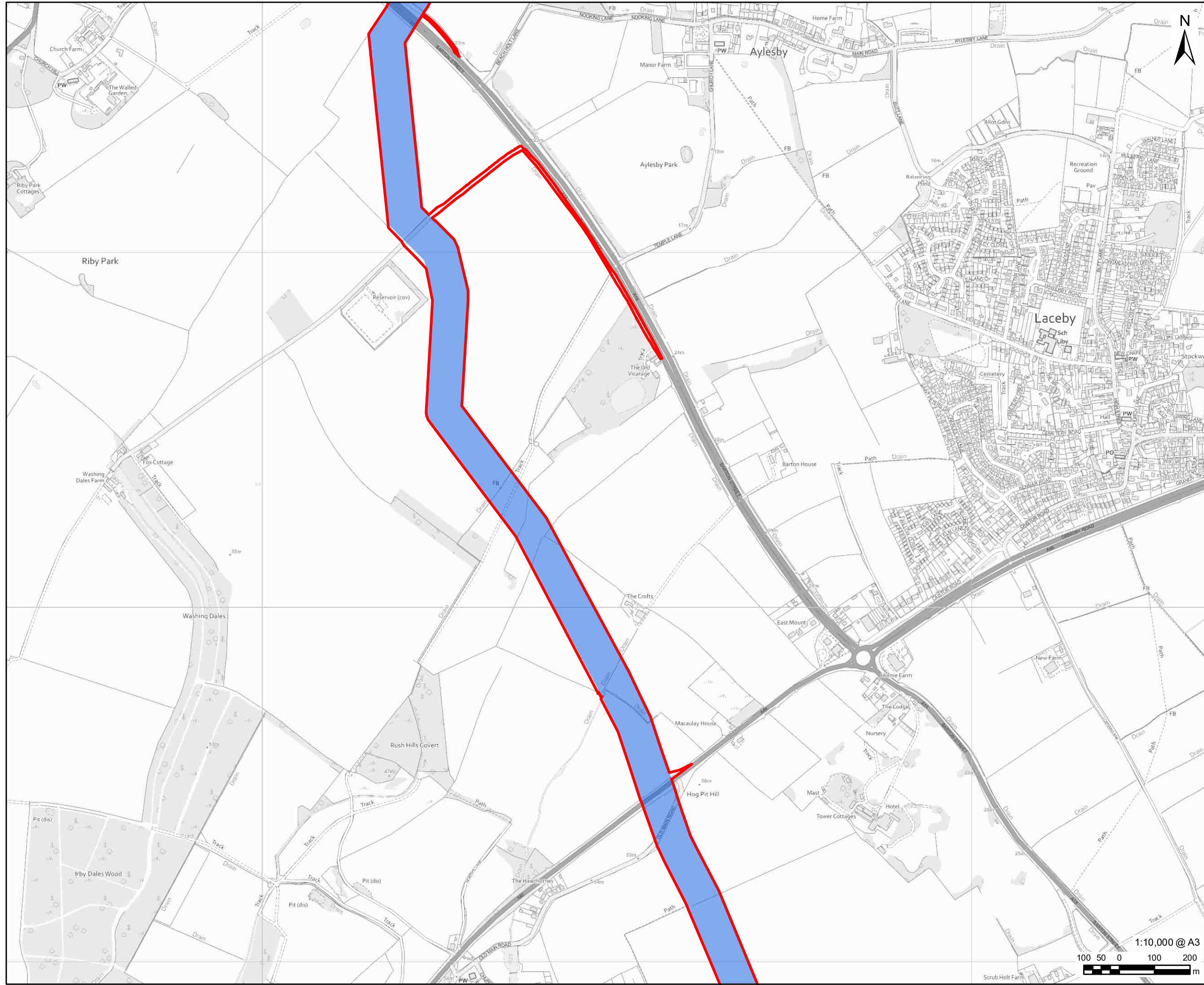
FIGURE TITLE  
 Indicative Limits of Deviation

ISSUE PURPOSE  
 FOR INFORMATION  
 PROJECT NUMBER / REFERENCE  
 60668955 / VCCS\_240425\_P81



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VikingCCS

**AECOM**

PROJECT

**Viking CCS Pipeline**

LEGEND

- Order Limits
- Indicative Limits of Deviation

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**FIGURE TITLE**

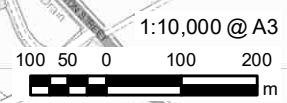
**Indicative Limits of Deviation**

**ISSUE PURPOSE**

FOR INFORMATION

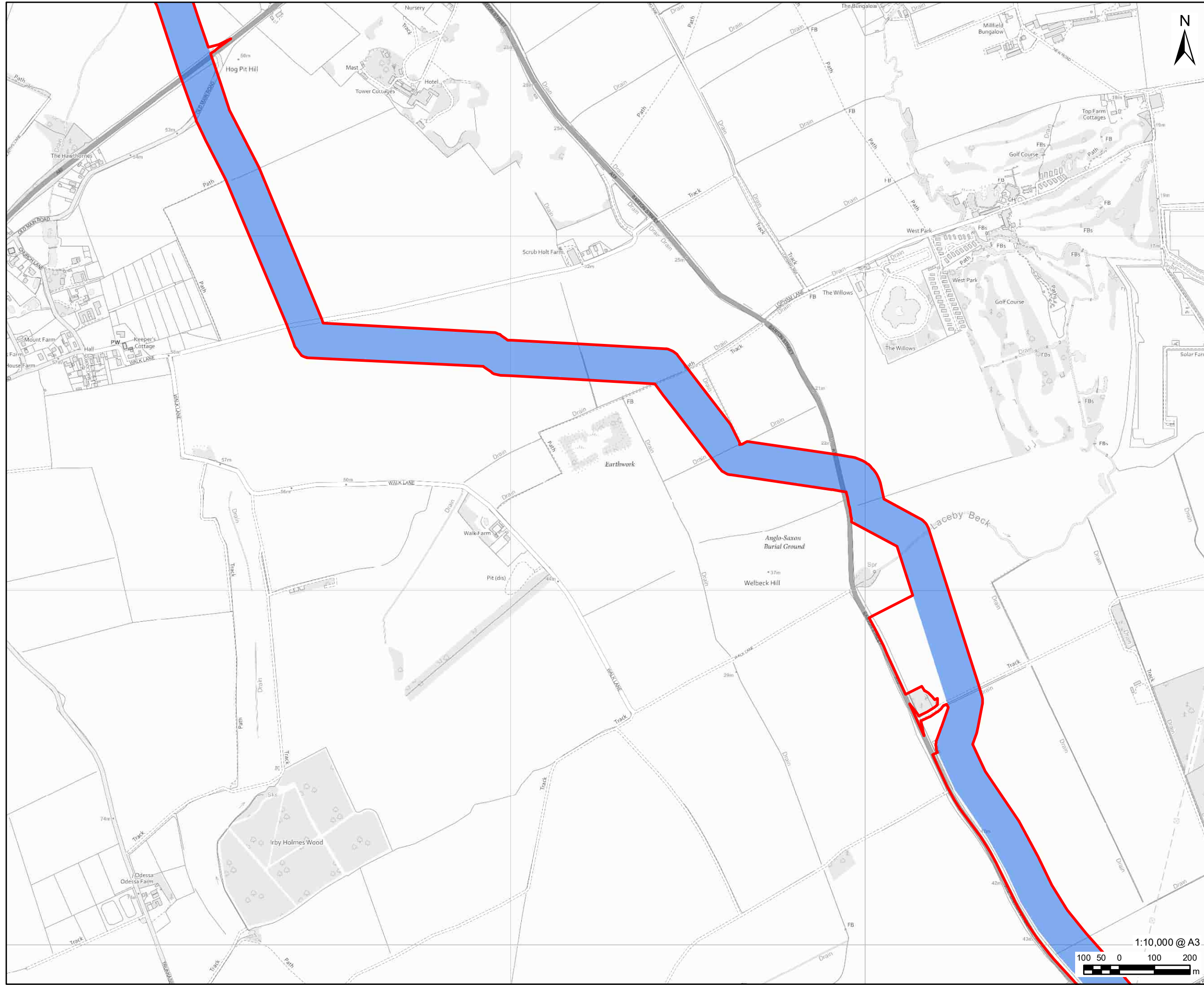
**PROJECT NUMBER / REFERENCE**

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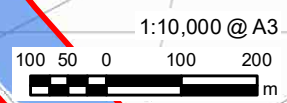
**LEGEND**

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- Indicative Limits of Deviation

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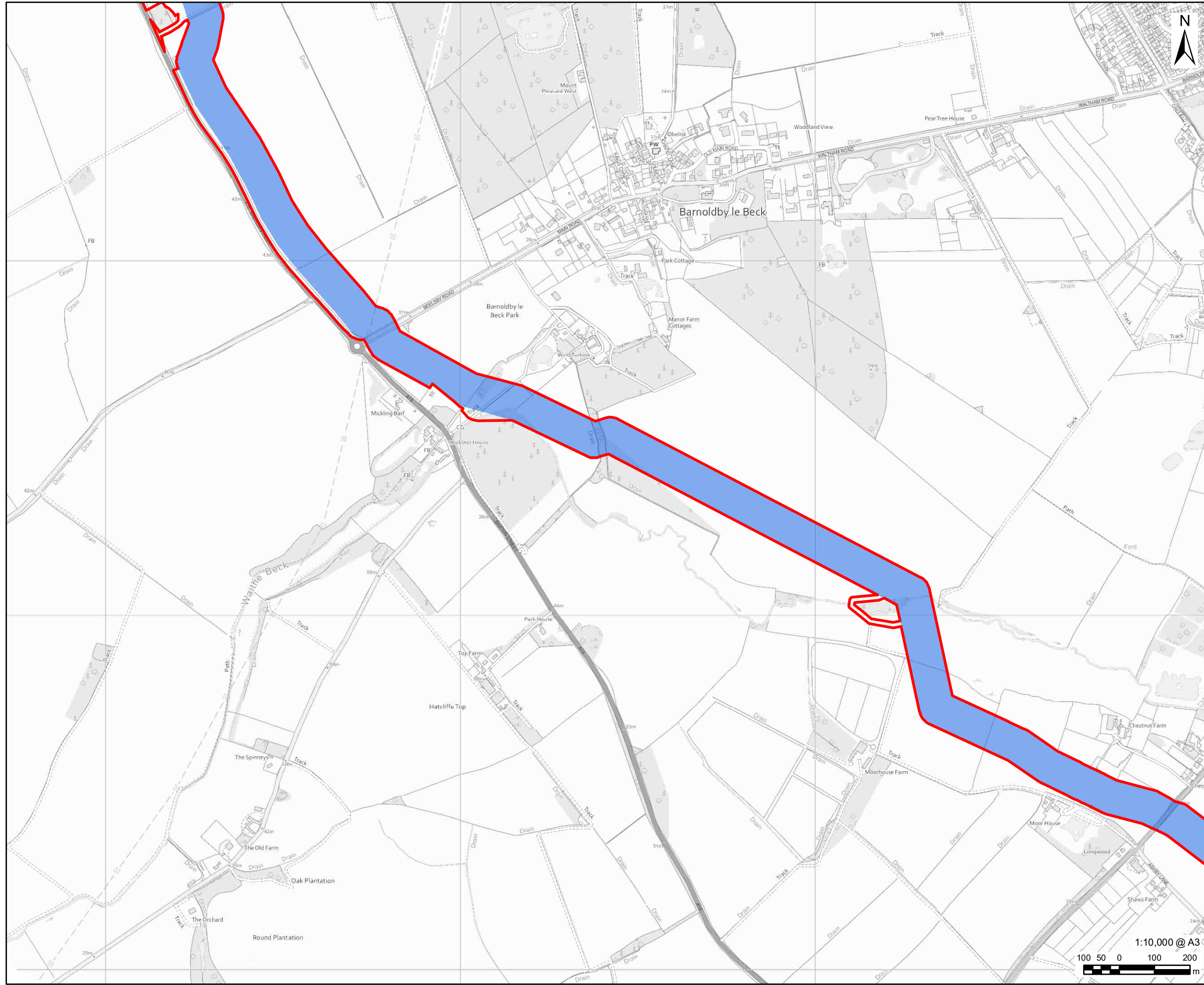


**FIGURE TITLE**  
**Indicative Limits of Deviation**



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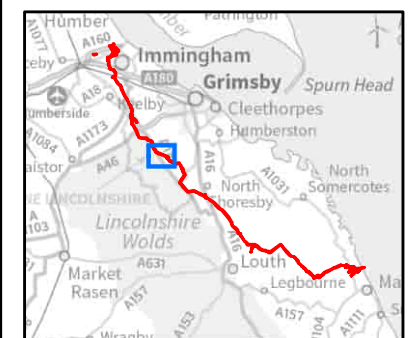
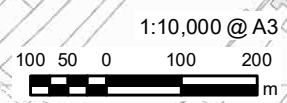


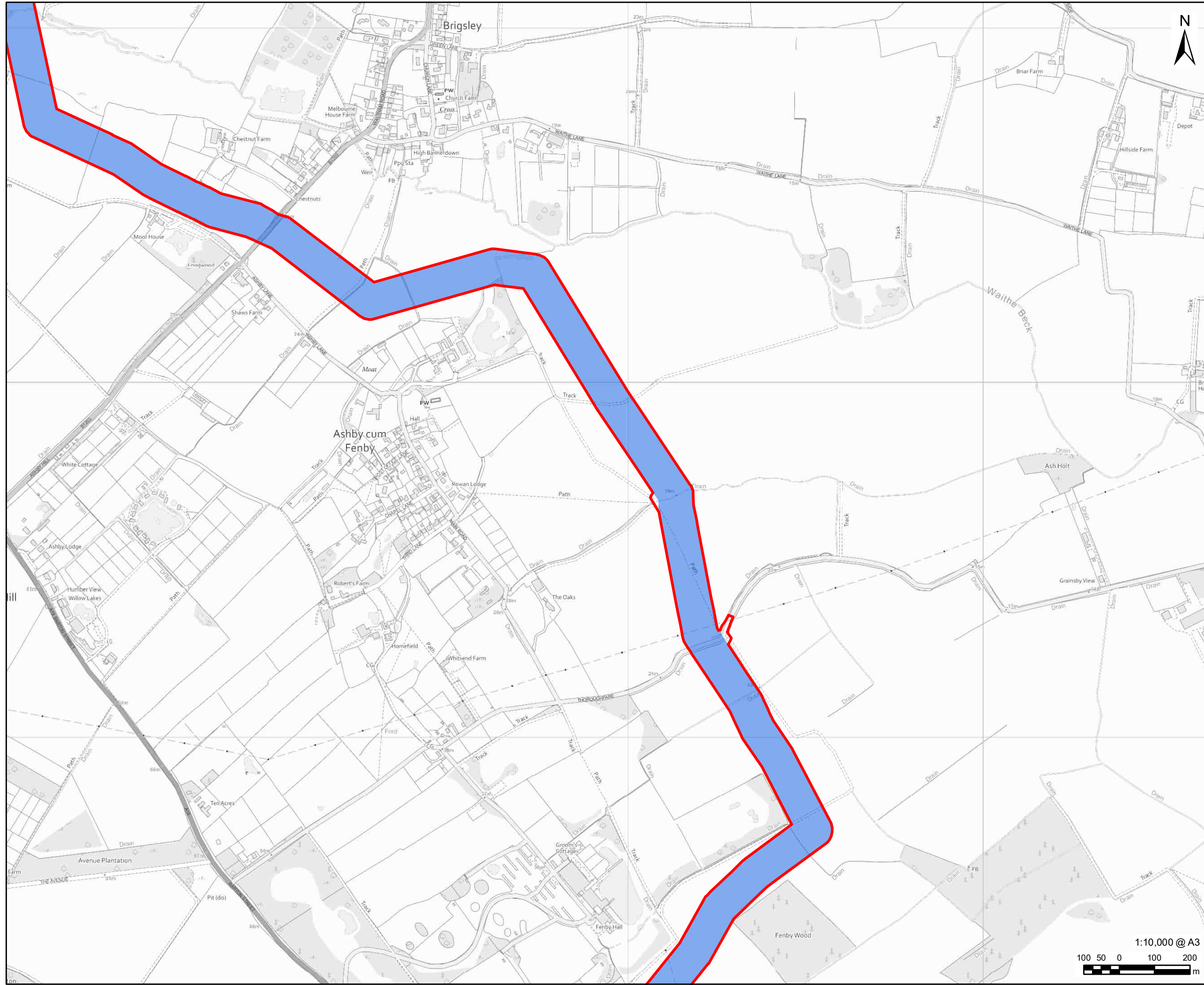
FIGURE TITLE  
**Indicative Limits of Deviation**

ISSUE PURPOSE  
FOR INFORMATION  
PROJECT NUMBER / REFERENCE  
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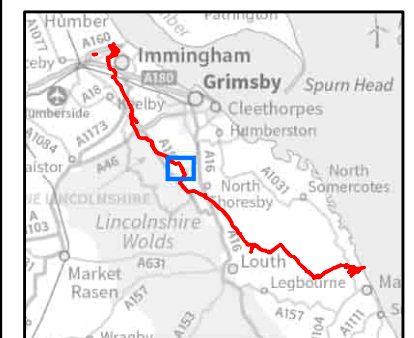




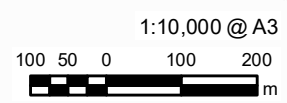
**LEGEND**

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- Indicative Limits of Deviation

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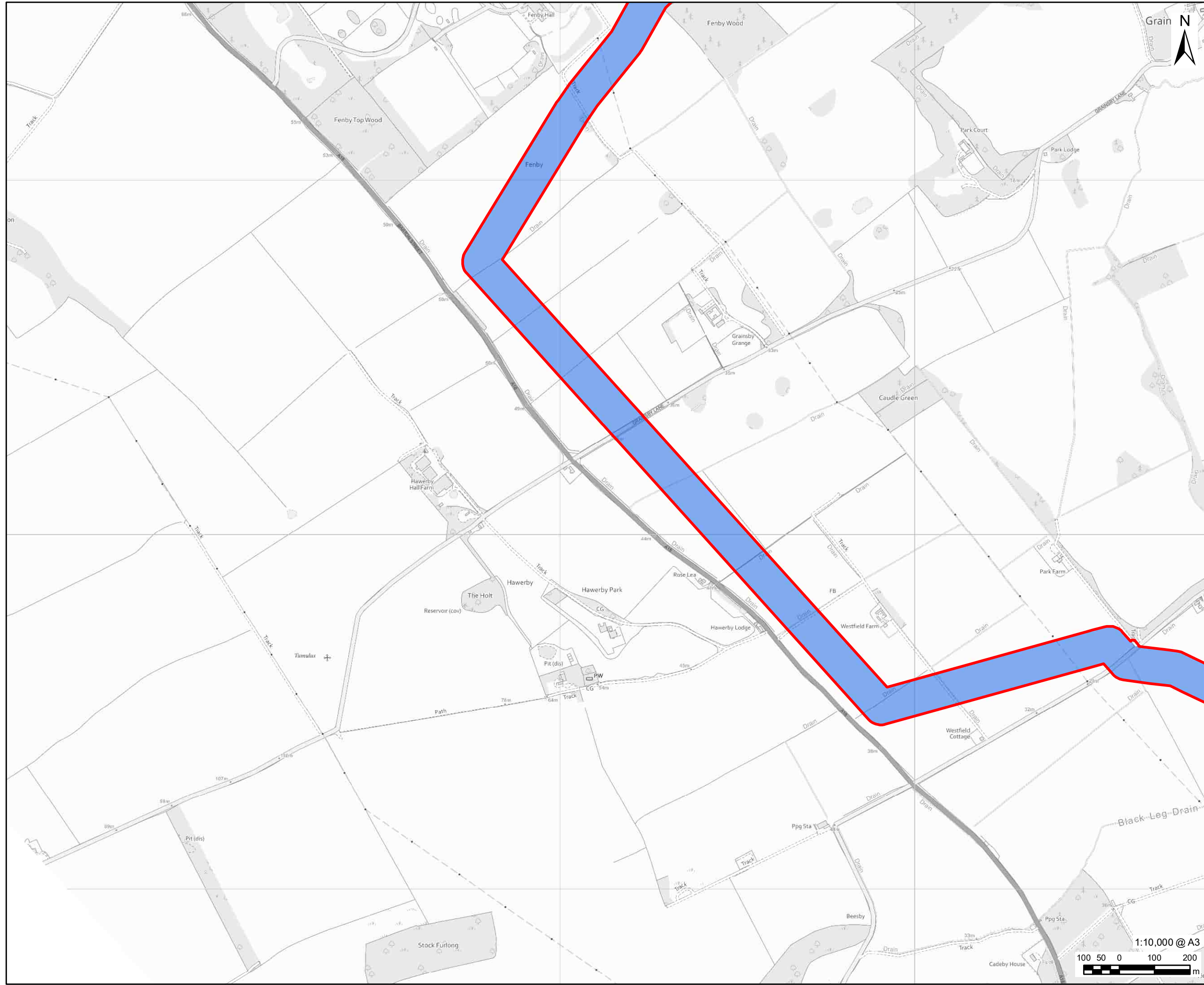


**FIGURE TITLE**  
**Indicative Limits of Deviation**



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PROJECT

**Viking CCS Pipeline**

LEGEND

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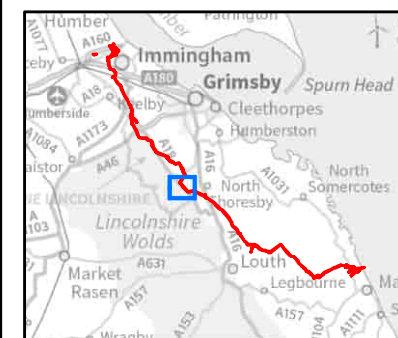


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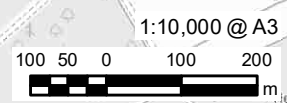
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ISSUE PURPOSE

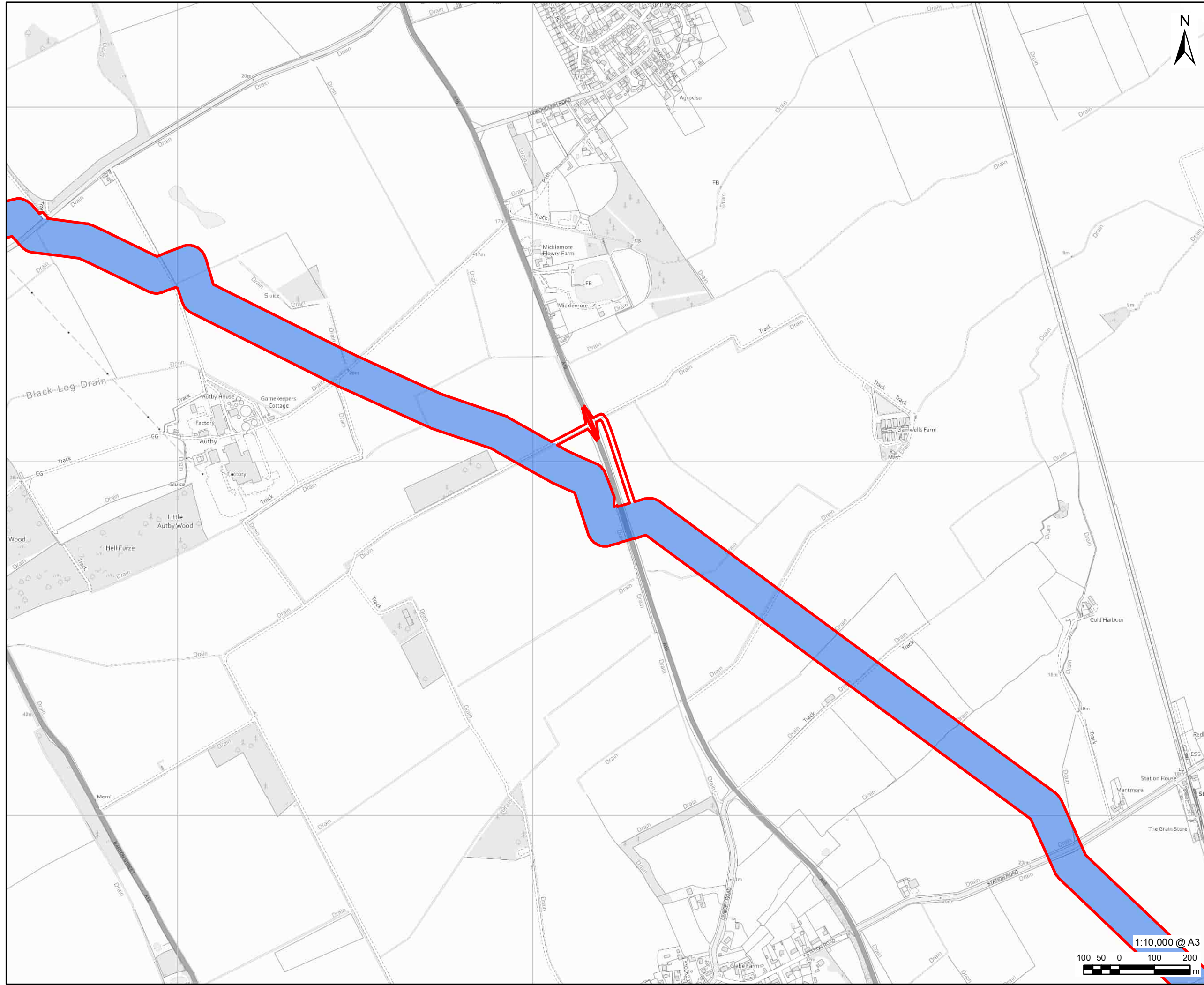
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LEGEND

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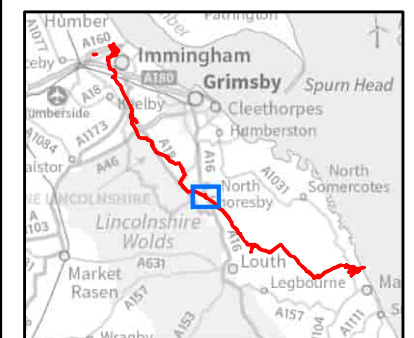
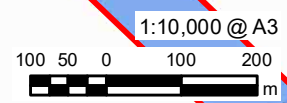


FIGURE TITLE  
**Indicative Limits of Deviation**

ISSUE PURPOSE  
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**FIGURE TITLE**

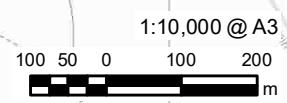
**Indicative Limits of Deviation**

**ISSUE PURPOSE**

FOR INFORMATION

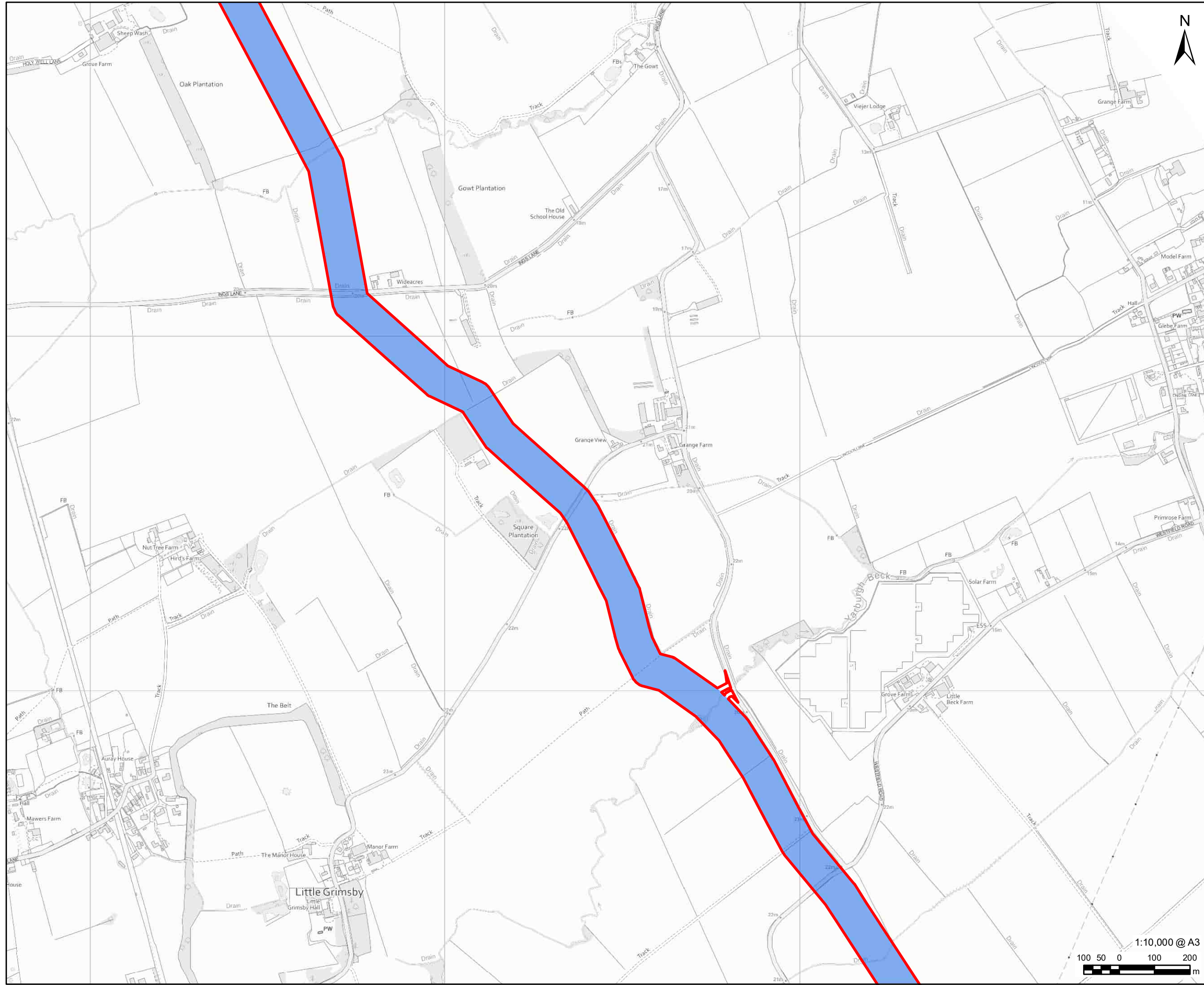
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- Indicative Limits of Deviation

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FIGURE TITLE

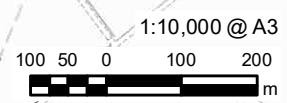
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ISSUE PURPOSE

FOR INFORMATION

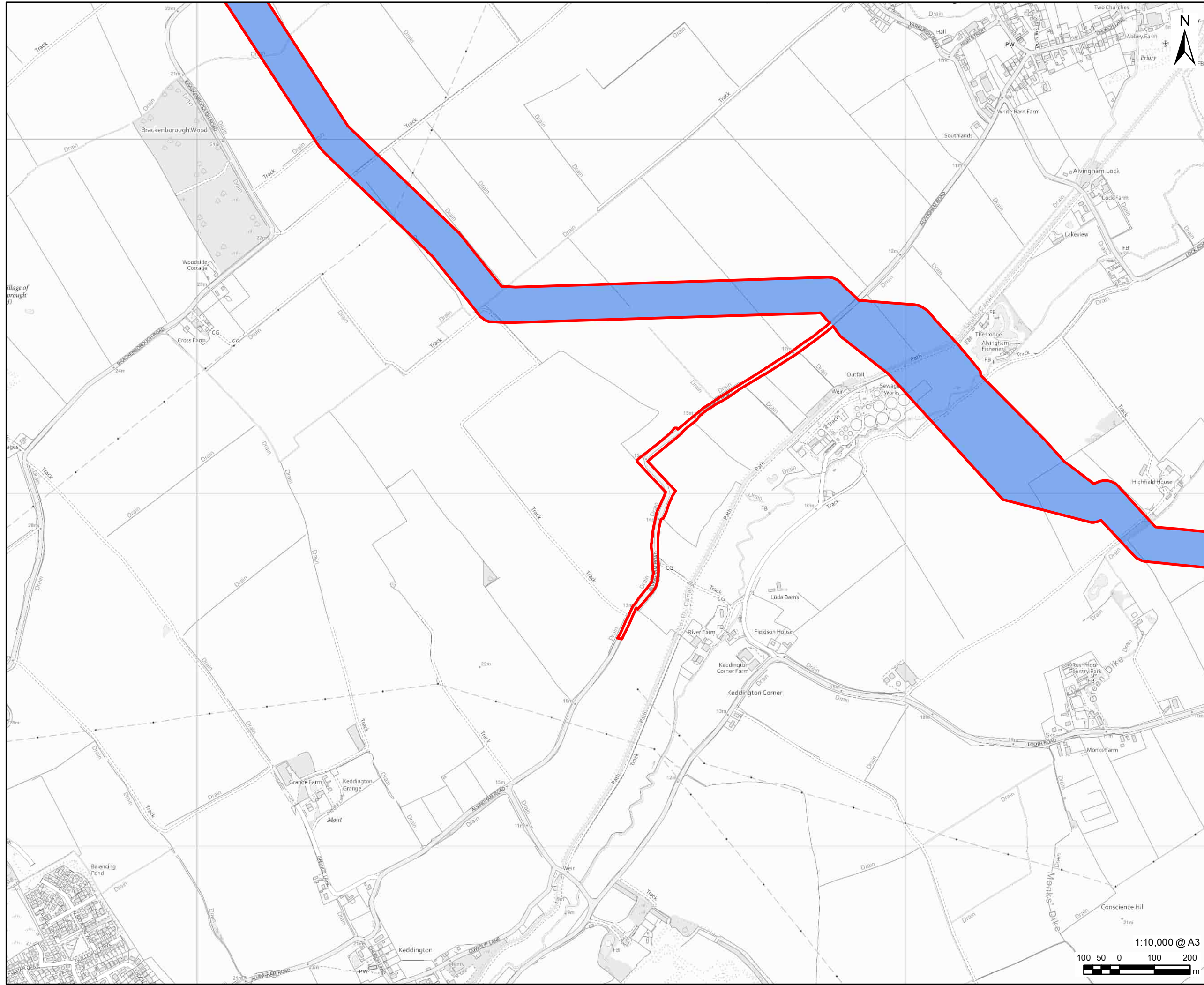
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**FIGURE TITLE**

**Indicative Limits of Deviation**

**ISSUE PURPOSE**

FOR INFORMATION

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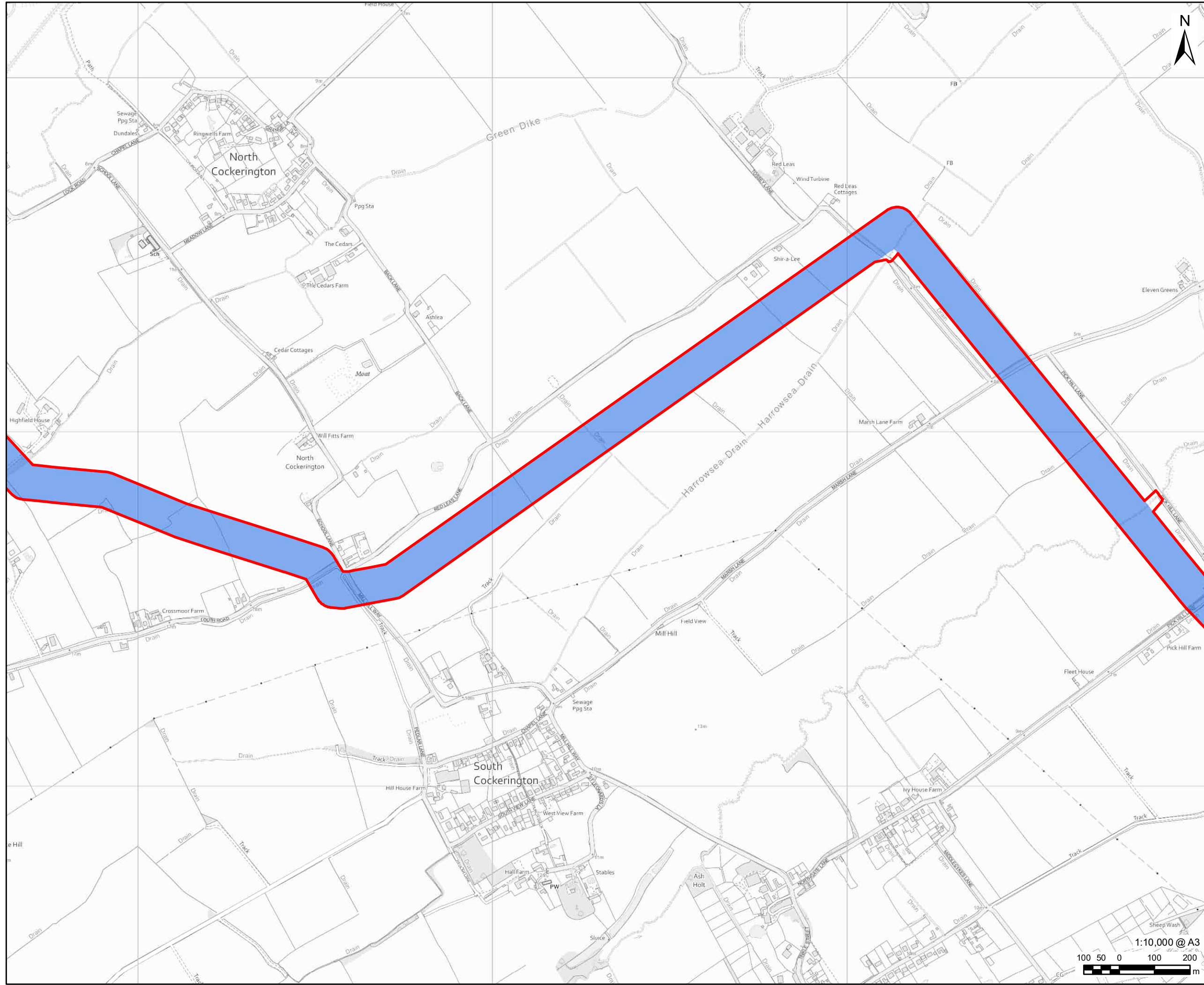
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1:10,000 @ A3

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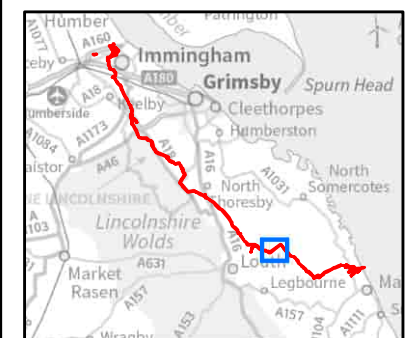




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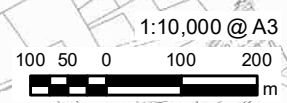
- Order Limits
- Indicative Limits of Deviation

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**FIGURE TITLE**  
 Indicative Limits of Deviation

**ISSUE PURPOSE**  
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 PROJECT NUMBER / REFERENCE  
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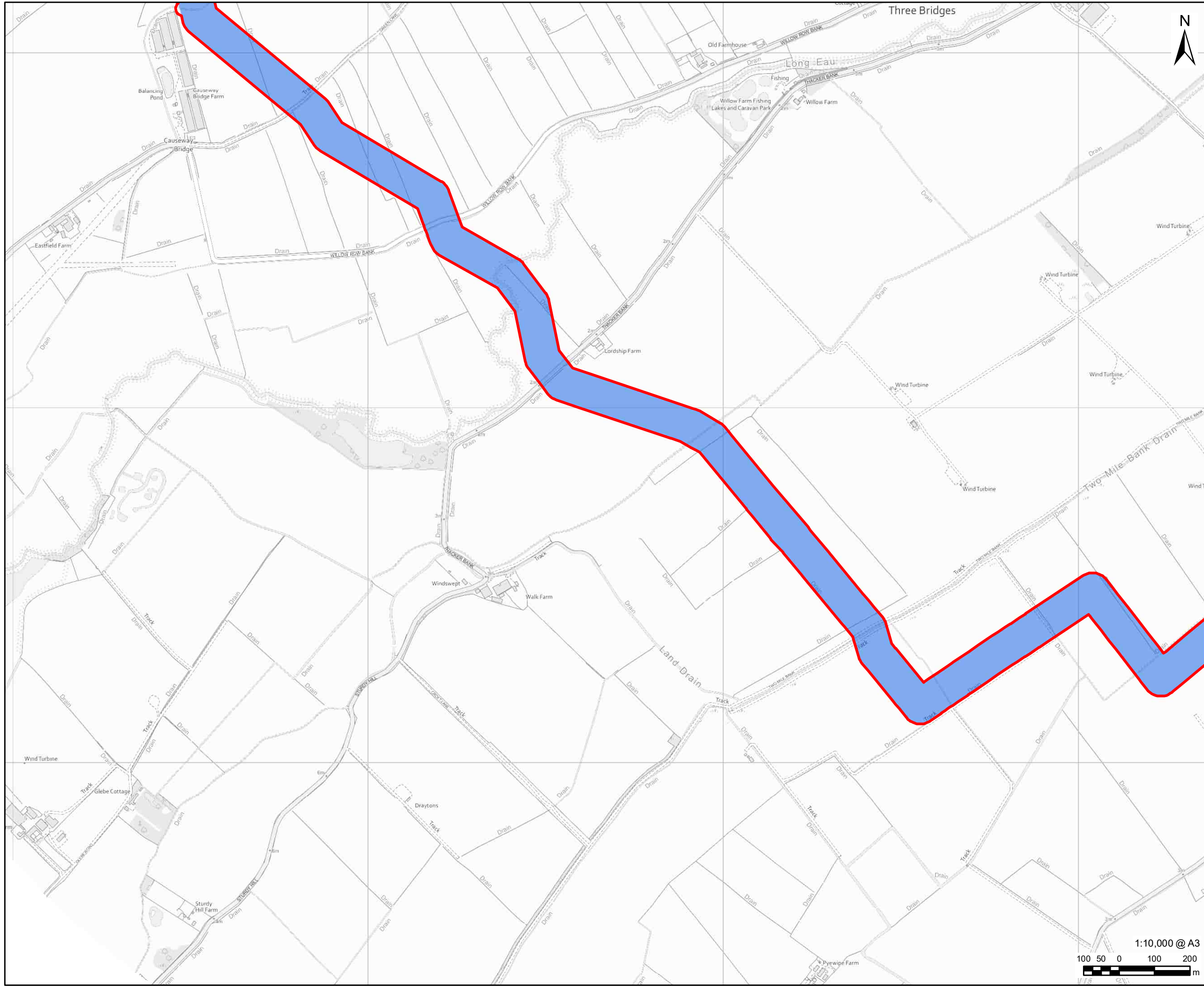


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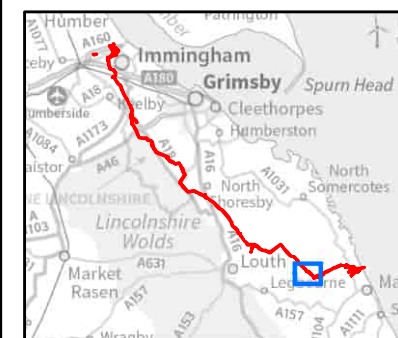
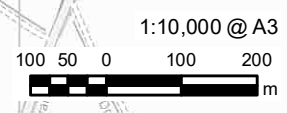


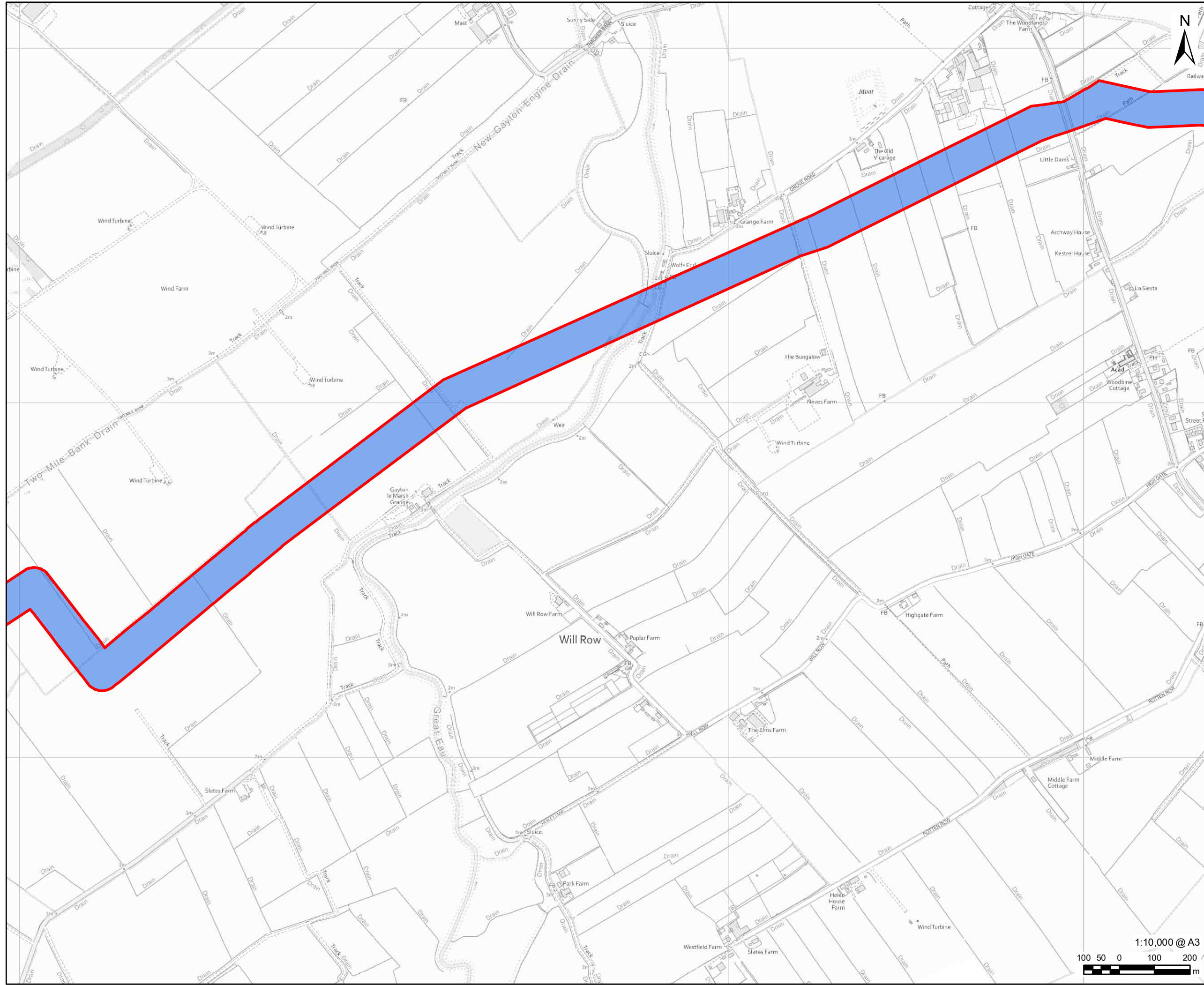
FIGURE TITLE  
**Indicative Limits of Deviation**

ISSUE PURPOSE  
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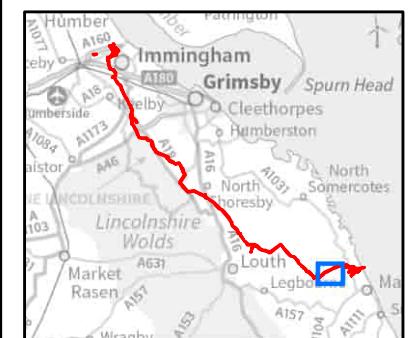
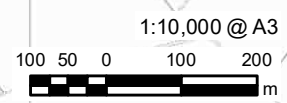


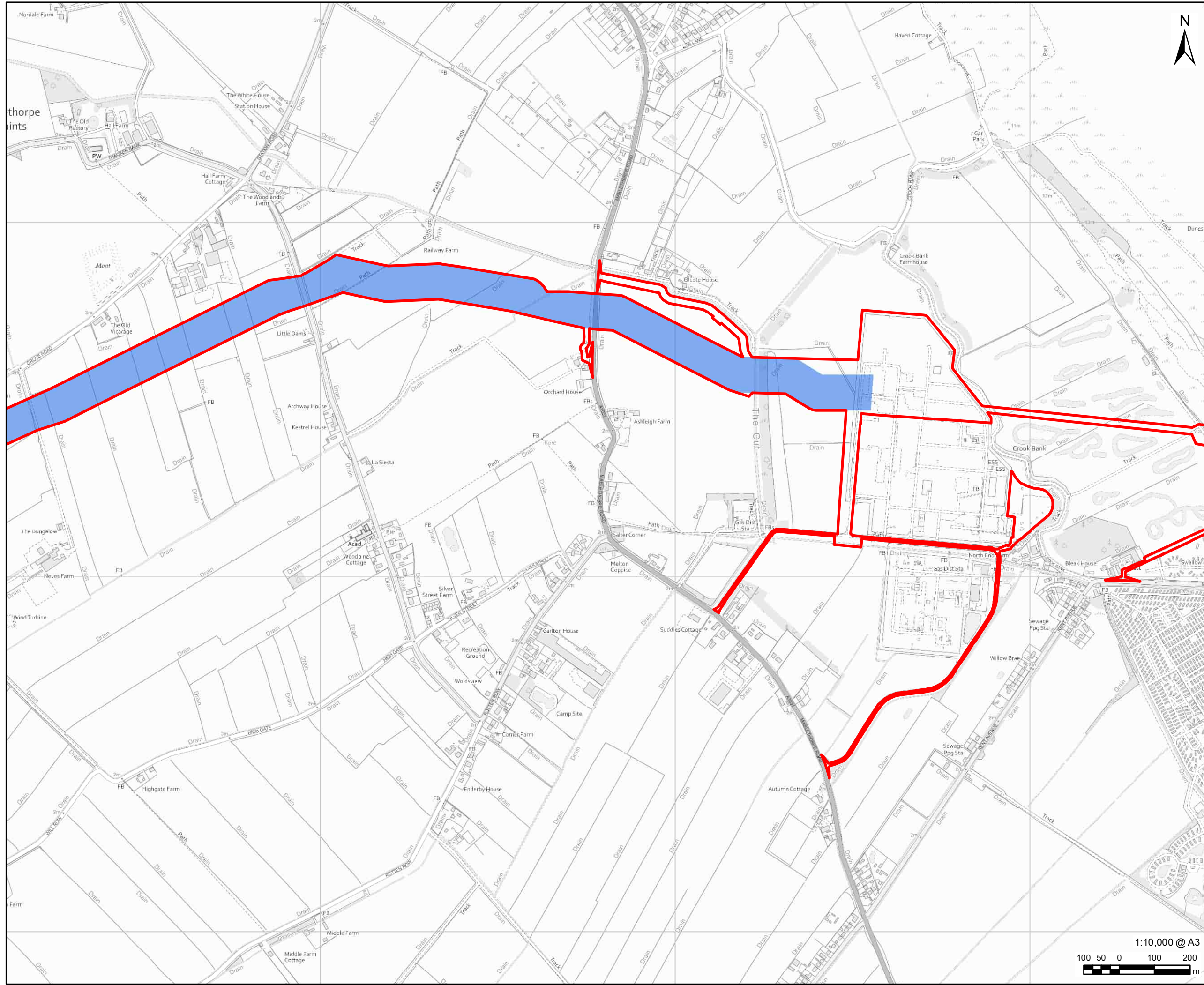
FIGURE TITLE  
 Indicative Limits of Deviation

ISSUE PURPOSE  
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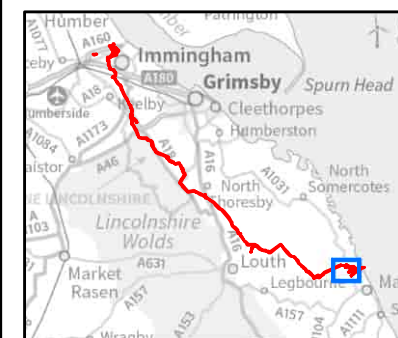
**Viking CCS Pipeline**

LEGEND

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**FIGURE TITLE**

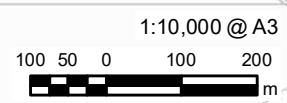
**Indicative Limits of Deviation**

**ISSUE PURPOSE**

FOR INFORMATION

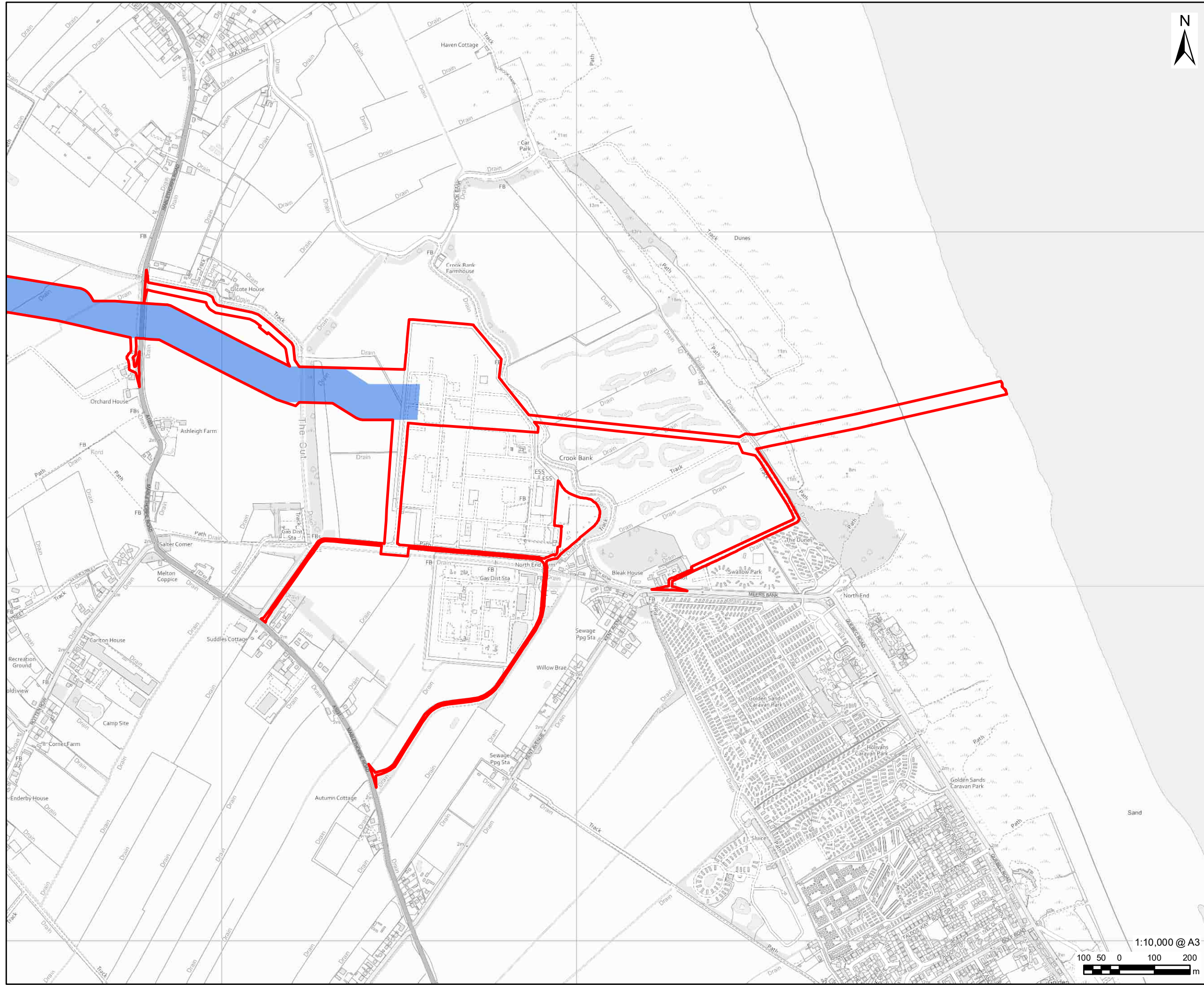
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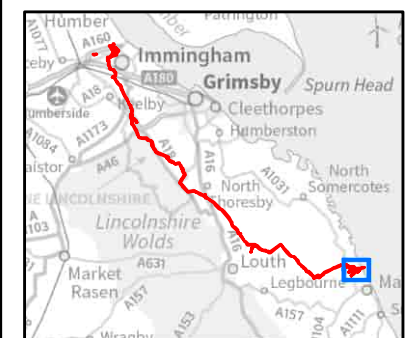
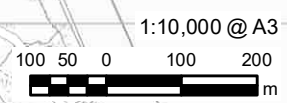


FIGURE TITLE  
**Indicative Limits of Deviation**

ISSUE PURPOSE  
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Viking CCS Pipeline

**First Written Questions -  
Appendix D: Supporting  
Information for Written Question  
1.3.1**



⑤

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**CARBON DIOXIDE APPRAISAL  
AND STORAGE LICENCE CS005**

---

**ENERGY ACT 2008**

**SECTION 18**

**CARBON DIOXIDE APPRAISAL AND STORAGE LICENCE**

**THE OIL AND GAS AUTHORITY**

**AND**

**CHRYSAOR PRODUCTION (U.K.) LIMITED**

**LICENCE**

in respect of exploration of a controlled place with a view to selecting a site for  
the storage of carbon dioxide.



This licence, made 17 December 2021  
 between the Oil and Gas Authority, of the one part and the company listed in  
 Part 1 of Schedule 1 of the other part witnesses as follows: -

---

**Interpretation etc.**

1.—(1) In this licence, the following expressions have the following meanings—

- “the Act” means the Energy Act 2008;
- “controlled place” has the meaning given to it in s.17(3), s.17(3A)(b) and s.17(4)(b) of the Act;
- “Crown Lease” has the meaning given to it in s.18(4) of the Act;
- “Appraisal Term” means (subject to clause 6 (*Extension of Appraisal Term*) and clause 8 (*Termination of Licence*)) the period specified as such in Part 2 of Schedule 1;
- “Half Year” means the period from 1st January to 30th June in any year and the period from 1st July to 31st December in any year;
- “injection” means the injection of carbon dioxide streams into the storage site;
- “Licensed Area” has the meaning given to it in clause 3;
- “the Licensee” means the person (or all the persons) specified in Part 1 of Schedule 1 as licence holder (or joint licence holders);
- “the OGA” means the Oil and Gas Authority;
- “Operational Term” has the meaning given by clause 7(1) (*Operational Term and Post-Closure Period*);
- “Storage Operator” means the single Licensee named as the operator in a Storage Permit;
- “Petroleum” includes any mineral oil or relative hydrocarbon and natural gas existing in its natural condition in strata but does not include coal or bituminous shales or other stratified deposits from which oil can be extracted by destructive distillation;
- “Post-Closure Period” has the meaning given by clause 7(2) (*Operational Term and Post-Closure Period*);
- “the Regulations” means the Storage of Carbon Dioxide (Licensing etc.) Regulations 2010;<sup>1</sup>
- “Start Date” means the date specified as such in Part 2 of Schedule 1;
- “Storage Permit” means a permit granted in accordance with clause 9 (*Application for a storage permit*);

---

1 SI 2010/2221



“the Termination Regulations” means the Storage of Carbon Dioxide (Termination of Licences) Regulations 2011;<sup>2</sup>

“Work Programme” means the programme specified in Schedule 4.

“Well” includes borehole.

(2) Any reference in this licence to a numbered regulation is to that regulation of the Regulations.

(3) Any expression used in this licence which is defined in regulation 1 or in the Act and not otherwise defined in this clause has the meaning given by that regulation or by the Act.

(4) Any reference in this licence to a clause or Schedule is a reference to a clause of, or Schedule to, this licence; and any reference in a clause to a paragraph is to a paragraph of that clause.

(5) Any obligations which are to be observed and performed by the Licensee shall at any time at which the Licensee is more than one person be joint and several obligations.

### Grant of licence

2.—(1) In consideration of the performance by the Licensee of all the terms and conditions hereof, the OGA, in exercise of the powers conferred upon it by the Act, hereby grants to the Licensee exclusive licence during the continuance of this licence and subject to the provisions hereof—

- (a) to explore the Licensed Area in accordance with clause 5 (*Appraisal and storage activities*); and
- (b) if the Licensee is granted a Storage Permit in respect of a storage site within the Licensed Area, and subject to the terms and conditions of that permit, to store carbon dioxide in accordance with clause 5(2); and
- (c) to establish and maintain installations for these purposes.

(2) No activity may be carried on under this licence unless the Licensee (or, where the Licensee is more than one person, one of those persons) is also the holder of a Crown Lease in respect of an area comprising at least the Licensed Area enabling such activities to be carried on.

### Licensed Area

3.—(1) The Licensed Area is the area for the time being in which the Licensee may exercise the rights granted by this licence and is, subject to paragraph (2), the area and, where applicable, the volume the co-ordinates and details of which are set out in Schedule 2.

(2) Where a storage permit is granted under this licence, on the grant of the storage permit the Licensed Area shall be as set out in clause 9.



**Term of Licence**

4.—(1) This licence shall commence with the later of

- (a) the Start Date; and
- (b) the date on which this licence was granted.

(2) Unless sooner determined or revoked under any of its provisions, this licence shall continue—

- (a) for the Appraisal Term;
- (b) for the Operational Term; and
- (c) for the Post-Closure Period.

**Appraisal and storage activities**

5.—(1) During the Appraisal Term, subject to the terms and conditions of this licence, the Licensee may, subject to the provisions of clause 12, carry on the following activities—

- (a) exploration (including test injection of carbon dioxide) within the Licensed Area with a view to, or in connection with, the carrying on of activities within section 17(2)(a) or (b) of the Act; and
- (b) the establishment or maintenance of installations for the purposes of such exploration.

(2) During the Operational Term and the Post-Closure Period, subject to the terms and conditions of this licence and of any Storage Permit granted under it, the Licensee may carry on the following activities—

- (a) storage of carbon dioxide (with a view to its permanent disposal) within section 17(2)(a) or (b) of the Act (including any ancillary monitoring);
- (b) exploration within the Licensed Area with a view to the carrying on of activities within section 17(2)(a) or (b) of the Act; and
- (c) the establishment or maintenance of installations for those purposes.

**Extension of Appraisal Term**

6.—(1) At any time not later than three months before the expiry of the Appraisal Term, the Licensee may, subject to performance of the terms and conditions herein contained, give notice in writing to the OGA that it desires that term to be extended for a further period.

(2) Where notice is given in pursuance of paragraph (1) of this clause, the OGA may in its discretion direct in writing that the Appraisal Term be extended for a period and subject to such conditions as the OGA may determine, and paragraph (1) shall apply to the Appraisal Term as so extended.

(3) Where the Appraisal Term is extended in pursuance of this clause, clause 4 (*Term of Licence*) shall apply in respect of that term as so extended.



**Operational Term and Post-Closure Period**

7.—(1) The Operational Term shall be the period beginning with the date on which the Storage Permit is granted and ending with the closure of the storage site.

(2) The Post-Closure Period shall be the period beginning with the closure of the storage site, and continuing until this licence is terminated pursuant to the Termination Regulations.

**Termination of Licence**

8.—(1) The Licensee may determine this licence or with respect to clause 8(1)(a) only, surrender any part of the Licensed Area by giving the OGA not less than one month’s notice in writing to that effect—

- (a) before the expiry of the Appraisal Term; or
- (b) before the expiry of the Operational Term, but before the commencement of injection,

and such notice shall specify the date, no later than the expiry of the Appraisal Term or the commencement of injection as applicable, on which the determination or surrender (where applicable) shall take effect.

(2) Such determination or surrender (where applicable) shall be without prejudice to any obligation imposed upon, or liability incurred by, the Licensee under the terms and conditions of this licence.

**Application for a storage permit**

9.—(1) An application for a storage permit may be made, in accordance with the Regulations, in respect of a storage site situated in the Licensed Area (‘Storage Permit’).

(2) If a Storage Permit is granted:

- (a) it shall be annexed as Schedule 5 to this licence;
- (b) subject to regulation 12, the conditions set out in Schedule 3 to this licence shall apply in respect of the storage site authorised under that Storage Permit; and
- (c) unless the OGA directs otherwise, with effect on and from the date of grant of the storage permit the Licensed Area shall be reduced such that the Licensed Area shall be the area, volume or both as applicable of the storage site, details of which shall be set out in Schedule 5, and Schedule 2 shall be amended accordingly, and this licence shall cease and determine in respect of any area or volume that no longer forms part of the Licensed Area but without prejudice to any obligation or liability imposed upon the Licensee or incurred by them under the terms of this licence prior to that date.



**Provision of contact details to the OGA**

10.—(1) A notice, direction or other document authorised or required (in whatever terms) to be given to the Licensee by virtue of this licence is treated as given to the Licensee if it is given to the person specified by the Licensee under paragraph (2) at the address so specified.

(2) The Licensee must supply the OGA with the name and address of a person to whom notices, directions and other documents are to be given.

(3) The Licensee must ensure that, where there is a change in the person to whom, or the address to which, information should be sent in accordance with paragraph (2), the OGA is notified of the change as soon as is reasonably practicable.

(4) If the Licensee fails to comply with paragraph (2) the OGA may give the Licensee a notice which—

- (a) requires the Licensee to comply with paragraph (2) within the period of 30 days beginning with the date of the notice; and
- (b) states that, if the Licensee fails to do so, the Licensee will be treated as having supplied under paragraph (2) the name and address specified by the OGA in the notice.

**Keeping of accounts**

11.—(1) The Licensee shall keep within the United Kingdom full and correct accounts in a form from time to time approved by the OGA of—

- (a) the quantity of the carbon dioxide stream injected into the Licensed Area;
- (b) the composition of the carbon dioxide stream injected into the Licensed Area;
- (c) the name and address of any person who has supplied the carbon dioxide stream to the Licensee, the quantity so supplied, and the place the carbon dioxide stream was conveyed from pursuant to the agreement for such supply; and
- (d) such other particulars as the OGA may from time to time direct.

(2) The Licensee shall within two months after the end of each Half Year in which this licence is in force and within two months after the expiration or determination of this licence, subject to the Termination Regulations, deliver to the OGA an abstract in a form from time to time approved by the OGA of the accounts for that Half Year or for the period prior to such expiration or determination as the case may be.

**Working obligations**

12.—(1) If a Work Programme is specified in Schedule 4, the Licensee shall before the expiry of the Appraisal Term carry out the Work Programme in accordance with the deadlines specified therein.



(2) If at any time the OGA serves a notice in writing on the Licensee requiring them to submit to the OGA, before a date specified in the notice, an appropriate programme for exploration with a view to selecting a site for carbon dioxide storage in the Licensed Area during a period so specified, the Licensee shall comply with the notice.

(3) For the purposes of paragraph (2), an appropriate programme is one which any person who, if that person—

- (a) were entitled to carry on the activities authorised by this licence;
- (b) had the competence and resources needed to carry on those activities to the best commercial advantage; and
- (c) were seeking to carry on those activities to the best commercial advantage,

could reasonably be expected to carry out during the period specified in the notice, and that period must be within the Appraisal Term.

(4) If a programme is submitted to the OGA in consequence of a notice served under paragraph (2), then—

- (a) the OGA shall not be entitled to revoke this licence on the ground that the programme does not satisfy the requirements of that paragraph ("the Relevant Requirements"); but
- (b) if the OGA is of the opinion that the programme does not satisfy the Relevant Requirements it may serve a notice in writing on the Licensee stating its opinion and the reasons for it.

(5) Where notice in respect of a programme is served on the Licensee under paragraph (4) the Licensee shall within a reasonable period beginning with the date of service of such notice submit to the OGA a further programme which satisfies the Relevant Requirements.

(6) The Licensee shall carry out any programme submitted by them under this clause in respect of which the OGA serves notice in writing on the Licensee stating that the OGA approves the programme and any programme approved by the OGA under this paragraph shall be deemed for the purposes of this licence to satisfy the Relevant Requirements.

(7) Where, in consequence of any breach or non-observance by the Licensee of any provision of paragraph (2), (5) or (6), the OGA has power by virtue of paragraph (1) of clause 32 (*Revocation of licence*) to revoke this licence, it may if it thinks fit exercise that power in relation to such part only of the Licensed Area as it may specify; and where it does so the rights granted by this licence shall cease in respect of the specified part of that area without prejudice to any obligation or liability imposed upon the Licensee or incurred by them under the terms of this licence.

(8) Where the Licensee has a duty by virtue of this clause to carry out a programme during a part of the Appraisal Term, the OGA may serve notice under paragraph (2) in respect of another such part.



**Amendments to the Work Programme**

13.—(1) This clause applies if a Work Programme has been specified in Schedule 4.

(2) This clause applies to an amendment to be made to the content of the Work Programme (including to the deadline for taking an action).

(3) At any time not later than three months before the deadline for taking an action in the Work Programme the Licensee may give notice in writing to the OGA that the Licensee desires an amendment regarding that action, and the notice shall describe the proposed amendment.

(4) The OGA may in its discretion permit a shorter notice period than the period of three months specified in paragraph (3).

(5) Where notice is given, the OGA may in its discretion direct in writing that the Work Programme be amended as proposed.

**Relevant Works**

14.—(1) The Licensee shall not erect or carry out any Relevant Works in a controlled place, either in the Licensed Area or elsewhere, for the purposes of—

(a) the storage of carbon dioxide within section 17(2)(a) of the Act in the Licensed Area; or

(b) the conveyance of carbon dioxide for storage in the Licensed Area, except in accordance with the consent in writing of the OGA.

(2) The document in which that consent is given may be a storage permit.

(3) The document in which that consent is given may specify—

(a) any conditions to which the consent is subject; and

(b) a period to which the consent is limited.

(4) In this clause, “Relevant Works” means any structure and any other works (of any kind) which are intended by the Licensee to be permanent and are neither designed to be moved from place to place without major dismantling nor intended by the Licensee to be used only for exploring for places suitable for the storage of carbon dioxide.

**Commencement and abandonment and plugging of Wells, and test injection**

15.—(1) The Licensee shall not commence or recommence the drilling of any Well, or undertake the test injection of carbon dioxide, without the consent in writing of the OGA.

(2) Subject to paragraph (6), the Licensee shall not abandon any Well without the consent in writing of the OGA.

(3) The Licensee shall ensure compliance with any conditions subject to which any consent under either of the foregoing paragraphs is given.



(4) If any such condition under paragraph (1) relates to the position, depth or direction of the Well, or to any casing of the Well or if any condition under either paragraph (1) or paragraph (2) relates to any plugging or abandoning of the Well, the OGA may from time to time direct that the Well and all records relating thereto shall be examined in such manner, upon such occasions or at such intervals and by such person as may be specified by the OGA's direction, and the Licensee shall pay to the OGA such fees and expenses for such examination as the OGA may specify.

(5) The plugging of any Well shall be done in accordance with a specification approved by the OGA applicable to that Well or to Wells generally or to a class of Wells to which that Well belongs and shall be carried out in an efficient and workmanlike manner.

(6) The OGA may at any time give the Licensee a notice requiring a Well drilled pursuant to this licence to be plugged and abandoned in accordance with paragraph (5) within the period specified in the notice (but this paragraph is subject to paragraphs (8) and (9)).

(7) The Licensee shall comply with any notice under paragraph (6).

(8) A notice under paragraph (6) may not be given less than one month before the expiry or determination of the Licensee's rights under this licence in relation to the area, or the part of the area, in which the well is drilled.

(9) A notice under paragraph (6) may be given only in relation to a well which has not been used within the period of one year ending with the day on which the notice is given.

(10) Subject to paragraphs (6), (7), (11) and (12), any Well drilled by the Licensee pursuant to this licence shall be plugged and abandoned in accordance with paragraphs (2), (3), (4) and (5), not less than one month before the expiry or determination of the Licensee's rights in respect of the area or part thereof in which that Well is situated.

(11) A direction by the OGA may be given by notice in writing to the Licensee not less than one month before the Licensee's rights in respect of the area or part thereof in which the Well is situated expire or determine so as to relieve the Licensee of the obligation imposed by paragraph (10) of this clause to plug and abandon the Well.

(12) Where the OGA terminates or revokes this licence, any Well drilled pursuant to this licence shall—

- (a) be plugged and abandoned in accordance with paragraphs (2), (3), (4) and (5), as soon as reasonably practicable; or
- (b) if the OGA so directs when giving the notice of termination or revocation, be left in good order and fit for further working together with all casings and any Well head fixtures (where applicable) the removal whereof would cause damage to such Wells.

(13) Any Well that, pursuant to a direction by the OGA under paragraph (11), has not been plugged and abandoned, shall be left in good order and fit for further working together with all casings and any Well head fixtures (where applicable) the removal whereof would cause damage to such Wells.



(14) Unless the OGA directs otherwise, all casings and fixtures forming part of a Well and left in position at the expiry or determination (whether by termination, revocation or otherwise) of the Licensee's rights in respect of the area or part thereof in which that Well is drilled, or at the completion of any works required of the Licensee under paragraph (12) (whichever is the later), shall be the property of the OGA.

### **Control of Development Wells**

**16.—**(1) The Licensee shall not suspend work on the drilling of a Development Well, or having suspended it in accordance with this paragraph shall not begin it again except with the consent in writing of the OGA and in accordance with the conditions, if any, subject to which the consent is given.

(2) When work on the drilling of a Development Well is suspended in accordance with paragraph (1) of this clause, the Licensee shall forthwith furnish the OGA with such information relating to the Well as the OGA may specify.

(3) The Licensee—

- (a) shall not do any Completion Work in respect of a Well in the Licensed Area except with the consent in writing of the OGA and in accordance with the conditions, if any, subject to which the consent is given;
- (b) shall furnish to the OGA, in accordance with the provisions of such a consent, particulars of any Completion Work done by the Licensee in respect of the Well; and
- (c) shall not remove or alter any casing or equipment installed by way of Completion Work in respect of a Well except with the consent in writing of the OGA and in accordance with the conditions, if any, subject to which the consent is given.

(4) In this clause—

“Completion Work”, in relation to a Well, means work, by way of the installation of a casing or equipment or otherwise after the Well has been drilled, for the purpose of bringing the Well into use as a Development Well; and

“Development Well” means a Well which the Licensee uses or intends to use in connection with the storage of carbon dioxide in the Licensed Area, other than a Well which for the time being he uses or intends to use only for activities pursuant to clause 5(1).

### **Distance of Wells within boundaries of Licensed Area**

**17.** No Well shall, except with the consent in writing of the OGA, be drilled or made so that any part thereof is less than one hundred and twenty-five metres from any of the boundaries of the Licensed Area.



**Extraction of stored carbon dioxide**

18. The Licensee must not (and must not permit any other person to) extract stored carbon dioxide from the storage site except with the prior written consent of the OGA and in accordance with any conditions subject to which any such consent is given.

**Avoidance of harmful methods of working**

19.—(1) The Licensee shall maintain all apparatus and appliances and all Wells in the Licensed Area which have not been abandoned and plugged as provided by clause 15 (*Commencement and abandonment and plugging of Wells, and test injection*) in good repair and condition and shall execute all operations in or in connection with the Licensed Area in a proper and workmanlike manner in accordance with methods and practice customarily used in good industry practice and in particular the Licensee shall take all steps practicable in order to prevent damage to adjoining strata. The Licensee shall give notice to the OGA of any event causing the escape or waste of Petroleum or the escape of carbon dioxide from the carbon dioxide stream or damage to any petroleum-bearing strata or any carbon dioxide storage site forthwith after the occurrence of that event.

(2) The Licensee shall comply with any instructions from time to time given by the OGA in writing relating to any of the matters set out in the foregoing paragraph.

(3) In this clause, "good industry practice" means the exercise of that degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled and experienced operator engaged in an activity consented to or authorised by or under this licence.

**Appointment of exploration operators**

20.—(1) The Licensee shall ensure that another person (including, in the case where the Licensee is two or more persons, any of those persons) does not exercise any function of organising or supervising any activity described in clause 5(1) (*Appraisal and storage activities*) in pursuance of this licence unless that other person is a person approved in writing by the OGA and the function in question is one to which that approval relates.

(2) The OGA shall not refuse to give its approval of a person in pursuance of paragraph (1) if that person is competent to exercise the function in question, but where an approved person is no longer competent to exercise that function the OGA may, by notice in writing given to the Licensee, revoke its approval.

**Fishing and navigation**

21. The Licensee shall not carry out any operations in or about the Licensed Area in such manner as to interfere unjustifiably with navigation or fishing in the waters of the Licensed Area or with the conservation of the living resources of the sea.



**Training**

**22.—**(1) The OGA may from time to time (after consulting the Licensee) give to the Licensee instructions in writing as to the training of persons employed or to be employed, whether by the Licensee or by any other person, in any activity which is related to the exercise of the rights granted by this licence, and the Licensee shall ensure that any instructions so given are complied with.

(2) The Licensee shall furnish the OGA with such information relating to the training of persons referred to in paragraph (1) of this clause as the OGA may from time to time request.

**Licensee to keep records**

**23.—**(1) The Licensee shall keep accurate records in a form from time to time approved by the OGA of the drilling, deepening, plugging or abandonment of all Wells and of any alterations in the casing thereof. Such records shall contain particulars of the following matters—

- (a) the site of and number assigned to every Well;
- (b) the subsoil and strata through which the Well was drilled;
- (c) the casing inserted in any Well and any alteration to such casing;
- (d) any Petroleum, water, mines or workable seams of coal encountered in the course of such activities; and
- (e) such other matters as the OGA may from time to time direct.

(2) The Licensee shall keep within the United Kingdom accurate geological plans and maps relating to the Licensed Area and such other records in relation thereto as may be necessary to preserve all information which the Licensee has about the geology of the Licensed Area.

(3) The Licensee shall deliver copies of the said records, plans and maps referred to in the two foregoing paragraphs to the OGA when requested to do so either—

- (a) within any time limit specified in the request; or
- (b) if there is no time limit specified, within four weeks of the request.

**Returns**

**24.—**(1) The Licensee shall furnish the OGA with such information as the OGA may from time to time request about any of the activities authorised by this licence.

(2) The Licensee shall comply with any such request either—

- (a) within any time limit specified in the request; or
- (b) if there is no time limit specified, within four weeks of the request.



**Licensee to keep samples**

**25.—**(1) As far as reasonably practicable the Licensee shall correctly label and preserve for reference for a period of five years samples of the sea bed and of the strata encountered in any Well and samples of any Petroleum or water discovered in any Well in the Licensed Area.

(2) The Licensee shall not dispose of any sample after the expiry of the said period of five years unless—

- (a) the Licensee has at least six months before the date of the disposal given notice in writing to the OGA of its intention to dispose of the same; and
- (b) the OGA or any person authorised by it has not within the said period of six months informed the Licensee in writing that it wishes the sample to be delivered to it.

(3) The OGA or any person authorised by it shall be entitled at any time—

- (a) to inform the Licensee in writing that it wishes the whole or any part of any sample preserved by the Licensee to be delivered to the OGA; or
- (b) to inspect and analyse any sample preserved by the Licensee.

(4) The Licensee shall forthwith comply with any request for the delivery of the whole or any part of any sample which is made in accordance with the preceding provisions of this clause.

**Reports to be treated as confidential**

**26.—**(1) All records, returns, plans, maps, samples, accounts and information (in this clause referred to as "the specified data") which the Licensee is or may from time to time be required to furnish under the provisions of this licence shall be supplied at the expense of the Licensee and shall not (except with the consent in writing of the Licensee which shall not be unreasonably withheld) be disclosed to any person not in the service or employment of the OGA or the Crown—

Provided that—

- (a) the OGA shall be entitled at any time to make use of any of the specified data for the purpose of preparing and publishing such returns and reports as may be required of the OGA by law;
- (b) the OGA shall be entitled at any time to furnish any of the specified data to the Natural Environment Research Council and to any other body of a like nature as may from time to time be carrying on activities of a substantially similar kind to the geological activities at present carried on by the said Council;
- (c) the OGA, the said Council and any such other body shall be entitled at any time to prepare and publish reports and surveys of a general nature using information derived from any of the specified data;



- (d) the OGA, the said Council and any other such body shall be entitled to publish any of the specified data of a geological, scientific or technical kind either—
- (i) after the expiration of the period of three years beginning with the date when the data were due to be supplied to the OGA in accordance with clause 23 (*Licensee to keep records*) or 24 (*Returns*), or if earlier, the date when the OGA received those data;
  - (ii) after the licence ceases to have effect, whether because of its determination, revocation or termination pursuant to the Termination Regulations; or
  - (iii) after the expiration of such longer period as the OGA may determine after considering any representations made to it by the Licensee about the publication of data in pursuance of this subparagraph.

(2) This clause shall not prevent the publication by the OGA of the results of any monitoring required by any Storage Permit granted pursuant to this licence.

#### **Inspection of records etc.**

27. The Licensee shall—

- (a) permit any person who is appointed by the OGA for the purpose to inspect, and to take copies of and make notes from, all books, papers, maps and other records of any kind kept by the Licensee in pursuance of this licence or in connection with activities about which the OGA is entitled to obtain information in pursuance of clauses 22(2) (*Training*) and 24 (*Returns*) of this licence; and
- (b) furnish that person at reasonable times with such information and provide them at reasonable times with such reasonable assistance as that person may request in connection with or arising out of an inspection in pursuance of this clause.

#### **Rights of access**

28. Without prejudice to the OGA's rights under the Regulations and the Act, any person or persons authorised by the OGA shall be entitled at all reasonable times to enter into and upon any of the Licensee's installations or equipment used or to be used in connection with the activities authorised by this licence—

- (a) to examine the installations, Wells, plant, appliances and works made or executed by the Licensee in pursuance of the licence and the state of repair and condition thereof; and
- (b) to execute any works, to carry out any monitoring or to provide and install any equipment which the OGA may be entitled to execute, carry out or provide and install in accordance with the provisions of this licence or in the execution of any powers under the Regulations or the Act.



**Power to execute works**

29. Without prejudice to the OGA's rights under the Regulations and the Act, if the Licensee shall at any time fail to perform the obligations arising under the terms and conditions of either of clauses 15 (*Commencement and abandonment and plugging of Wells, and test injection*) or 19 (*Avoidance of harmful methods of working*), the OGA shall be entitled, after giving to the Licensee reasonable notice in writing of its intention, to execute any works and to provide and install any equipment which in the opinion of the OGA may be necessary to secure the performance of the said obligations or any of them and to recover the costs and expenses of so doing from the Licensee.

**Transfer of licence etc.**

30. The Licensee shall not, except with the consent in writing of the OGA and in accordance with the conditions (if any) of the consent, do anything whatsoever whereby, under the law (including the rules of equity) of any part of the European Union or of any other place, any right granted by this Licence or derived from a right so granted becomes exercisable by or for the benefit of or in accordance with the directions of another person.

**Indemnity against third party claims**

31. The Licensee shall at all times keep the OGA effectually indemnified against all actions, proceedings, costs, charges, claims and demands whatsoever which may be made or brought against the OGA by any third party in relation to or in connection with this licence or any matter or thing done or purported to be done in pursuance thereof.

**Revocation of licence**

32.—(1) Without prejudice to the rights of the OGA under the Regulations and the Act, if any of the events specified in paragraph (3) occurs, or the conditions specified in paragraph (4) are satisfied, then the OGA may (by giving the Licensee notice in writing to that effect) revoke this licence with effect from the date specified in the notice

(2) If the OGA exercises the power in paragraph (1), the rights granted to the Licensee by this licence shall cease and determine; but subject nevertheless and without prejudice to any obligation imposed upon, or liability incurred by, the Licensee under the terms and conditions of this licence.

(3) The events specified by this paragraph are—

- (a) any breach or non-observance by the Licensee of any of the terms and conditions of this licence;
- (b) in Great Britain, the bankruptcy or sequestration of the Licensee;
- (c) in Great Britain, the making by the Licensee of any arrangement or composition with its creditors;

- (d) in Great Britain, if the Licensee is a company, the appointment of a receiver or administrator or any liquidation whether compulsory or voluntary;
- (e) in a jurisdiction other than Great Britain, the commencement of any procedure or the making of any arrangement or appointment substantially corresponding to any of those mentioned in sub-paragraphs (b) to (d) of this paragraph;
- (f) by the date that is two years from the Start Date, the Licensee (or, where the Licensee is more than one person, one of those persons) is not also the holder of a Crown Lease in respect of an area comprising at least the Licensed Area;
- (g) where the Licensee (or, where the Licensee is more than one person, one of those persons) ceases to hold a Crown Lease in respect of an area comprising at least the Licensed Area.

and where two or more persons are the Licensee any reference to the Licensee in sub-paragraphs (b) to (e) of this paragraph is a reference to any of those persons.

(4) The conditions specified by this paragraph are—

- (a) the Licensee is a company; and
- (b) there is a change in the control of the Licensee; and
- (c) the OGA serves notice in writing on the Licensee stating that the OGA proposes to revoke this licence in pursuance of this paragraph unless such a further change in the control of the Licensee as is specified in the notice takes place within the period of three months beginning with the date of service of the notice; and
- (d) that further change does not take place within that period.

(5) There is a change in the control of the Licensee for the purposes of paragraph (4)(b) whenever a person has control of the Licensee who did not have control of the Licensee when this licence was granted (or, if there has been a transfer of this licence under clause 30 (*Transfer of licence*), when that transfer took place); and sections 450(2) to (4) and 451(1) to (5) of the Corporation Tax Act 2010 shall apply, for the purpose of determining whether for the purposes of this paragraph a person has or had control of the Licensee, with the modifications specified in paragraph (7).

(6) Where two or more persons are the Licensee and any of them is a company, paragraphs (4) and (5) of this clause shall have effect as if—

- (a) sub-paragraph (a) of paragraph (4) were omitted;
- (b) in sub-paragraph (b) of that paragraph, after the word “of” there were inserted the words “any company included among the persons who together constitute”; and
- (c) for the word “Licensee” in any other provision of those paragraphs there were substituted the word “company”.

(7) For the purposes of paragraph (5) of this clause, whether a person has control of another person shall be determined in accordance with sections



450(2) to (4) and 451(1) to (5) of the Corporation Tax Act 2010 subject to the following modifications: are—

- (a) for the words "the greater part" wherever they occur in section 450(3), there shall be substituted the words "one-third or more";
- (b) in section 451(4) and (5), for the word "may", there shall be substituted the word "must"; and
- (c) in section 451(4) and (5) any reference to an associate of a person shall be construed as including only—
  - (i) a relative (as defined in section 448(2) of that Act) of the person;
  - (ii) a partner of the person; and
  - (iii) a trustee of a settlement (as defined in section 620 of the Income Tax (Trading and Other Income) Act 2005) of which the person is a beneficiary.

**Power of partial revocation**

**33.—**(1) This clause applies in a case where two or more persons are the Licensee and—

- (a) an event mentioned in clause 32(3)(b), (c), (d), or (e) occurs in relation to one of those persons; or
- (b) the conditions specified in clause 32(4) are satisfied in relation to one of those persons.

(2) Where this clause applies, the OGA may exercise the power of revocation in clause 32 to revoke the licence in so far as it applies to the person mentioned in paragraph (1)(a) or (b).

(3) If the OGA exercises the power in paragraph (2), the rights granted to the person under this licence cease, but without prejudice to any obligation imposed upon, or liability incurred by, the person under the terms and conditions of this licence.

(4) Where this licence is revoked in relation to one person under this clause, it continues to have effect in respect of the other person who constitutes, or persons who together constitute, the Licensee and in relation to whom it is not revoked.

**Ministry of Defence**

**34.—**(1) The Licensee shall give the Ministry of Defence six months' prior notice of any installation movements within the Licensed Area.

(2) The Licensee shall give the Ministry of Defence six weeks' prior notice of any seismic survey within the Licensed Area.

(3) The Licensee shall, at the Licensee's own expense, install and maintain underwater sonar beacons to Ministry of Defence specifications on any structures that may be temporarily within the Licensed Area provided that there shall be no requirement to fit such beacons to fixed and charted installations.

### **Relationship with fishing industry**

**35.—(1)** The Licensee shall appoint a fisheries liaison officer who shall agree suitable arrangements with the seismic survey and supply vessel owners employed by the Licensee, their masters and the organisations or individuals which represent the local fishing industry in order to promote good working relationships between the various parties. The setting up of the arrangements shall be the responsibility of the Licensee. In particular the Licensee shall—

- (a) consult the organisations which represent the local fishing industry about the sea routes to be used by supply vessels;
- (b) after informing the OGA of the result of such consultations, agree with the OGA which routes shall be used to minimise interference with fishing activities without thereby unreasonably increasing transit times;
- (c) ensure that the agreed routes are used unless safety of navigation or security of cargo considerations dictate otherwise; and
- (d) take all reasonable steps to ensure that a responsible person who is fluent in English is a member of the crew of the supply vessel.

(2) The Licensee shall make every effort to locate and remove, without unreasonable delay, any debris resulting from the licensed activities. The Licensee shall consult the relevant fishing organisations on the method of clearance and inform the OGA of the result of such consultation. If as a result of such consultation the OGA determines that the method of clearance of debris should be modified, such modifications shall be observed by the Licensee.

(3) Claims for damage to or loss of gear or loss of fishing time arising from reported debris shall be dealt with promptly by the Licensee.

### **Discovery of Petroleum**

**36.—(1)** This paragraph applies where the Licensee—

- (a) becomes aware, whether by means of a geological survey or otherwise, of the presence of any amount of Petroleum at a place within the Licensed Area;
- (b) is not the holder of a Petroleum Licence entitling the holder to search and bore for and get Petroleum in and from that place; and
- (c) has not entered into any agreement with the holder of such a Petroleum Licence, and in accordance with its provisions, entitling the Licensee to the Petroleum got from that place.

(2) When paragraph (1) applies the Licensee shall, as soon as is reasonably practicable—

- (a) notify the OGA of such presence of Petroleum in writing; and
- (b) comply with any directions given by the OGA.



(3) For the purposes of paragraph (1), "Petroleum Licence" means a licence under section 3 of the Petroleum Act 1998 or section 2 of the Petroleum (Production) Act 1934.

### **Arbitration**

**37.**—(1) If at any time any dispute, difference or question shall arise between the OGA and the Licensee as to any matter arising under or by virtue of this licence or as to their respective rights and liabilities in respect thereof then the same shall, except where it is expressly provided by this licence that the matter or thing to which the same relates is to be determined, decided, directed, approved or consented to by the OGA, be referred to arbitration as provided by the following paragraphs.

(a) The arbitration referred to in the foregoing paragraph shall be by a single arbitrator who, in default of agreement between the OGA and the Licensee as to its appointment, shall be appointed by the Lord Chief Justice of England for the time being.

(2) This clause does not affect the power of the OGA to institute (or authorise the institution) of criminal proceedings, to apply for an injunction, or to give any direction or notice, under any provision contained in Chapter 3 of Part 1 of the Act.

(3) This clause does not apply to any matter arising under the provisions of the Storage Permit.

### **Counterpart Execution**

**38.** This licence may be executed in any number of counterparts with the same effect as if the signatures on the counterparts were a single engrossment thereof PROVIDED THAT this licence shall not be completed until each party has signed a counterpart.

**THIS IS SCHEDULE 1 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSAOR  
PRODUCTION (U.K.) LIMITED**

**PART 1**

**Companies**

Chrysaor Production (U.K.) Limited, with registered address of Brettenham House, Lancaster Place, London, England, WC2E 7EN (registered number: 00524868).

**PART 2**

The **Start Date** is 15 October 2021.

The **Appraisal Term** is the period 6 years beginning at the Start Date.



**THIS IS SCHEDULE 2 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSAOR  
PRODUCTION (U.K.) LIMITED**

**Licensed Area**

A polygon, the boundary of which is defined by parallels of Latitude and Meridians joining the following points, as defined on European Datum First Adjustment 1950 (ED50):

- |     |              |             |
|-----|--------------|-------------|
| 1)  | 53° 35' 0" N | 2° 07' 0" E |
| 2)  | 53° 35' 0" N | 2° 16' 0" E |
| 3)  | 53° 33' 0" N | 2° 16' 0" E |
| 4)  | 53° 33' 0" N | 2° 20' 0" E |
| 5)  | 53° 32' 0" N | 2° 20' 0" E |
| 6)  | 53° 32' 0" N | 2° 22' 0" E |
| 7)  | 53° 31' 0" N | 2° 22' 0" E |
| 8)  | 53° 31' 0" N | 2° 24' 0" E |
| 9)  | 53° 27' 0" N | 2° 24' 0" E |
| 10) | 53° 27' 0" N | 2° 26' 0" E |
| 11) | 53° 26' 0" N | 2° 26' 0" E |
| 12) | 53° 26' 0" N | 2° 28' 0" E |
| 13) | 53° 24' 0" N | 2° 28' 0" E |
| 14) | 53° 24' 0" N | 2° 31' 0" E |
| 15) | 53° 17' 0" N | 2° 31' 0" E |
| 16) | 53° 17' 0" N | 2° 27' 0" E |
| 17) | 53° 15' 0" N | 2° 27' 0" E |
| 18) | 53° 15' 0" N | 2° 10' 0" E |
| 19) | 53° 18' 0" N | 2° 10' 0" E |
| 20) | 53° 18' 0" N | 2° 08' 0" E |
| 21) | 53° 20' 0" N | 2° 08' 0" E |
| 22) | 53° 20' 0" N | 2° 06' 0" E |
| 23) | 53° 21' 0" N | 2° 06' 0" E |
| 24) | 53° 21' 0" N | 2° 03' 0" E |
| 25) | 53° 26' 0" N | 2° 03' 0" E |
| 26) | 53° 26' 0" N | 2° 07' 0" E |
| 27) | 53° 35' 0" N | 2° 07' 0" E |

The lines joining coordinates (1) to (27) are navigated by loxodromes.

**THIS IS SCHEDULE 3 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSAOR  
PRODUCTION (U.K.) LIMITED**

**General Conditions applicable to a storage site authorised under a  
Storage Permit granted under this licence**

**Closure of storage site by the operator**

1.—(1) The Storage Operator must close the storage site where the conditions for closure set out in the Storage Permit are met.

(2) The Storage Operator may close the storage site if—

- (a) the consent in writing of the OGA has been given following an application under sub-paragraph (3), and
- (b) any conditions attached to that consent have been met.

(3) An application for the OGA's consent to the closure of the storage site must—

- (a) be made in writing and sent to the OGA, and
- (b) contain the reasons why the Storage Operator proposes to close the storage site.

(4) However, a storage site may not be closed under sub-paragraph (1) or (2) until the terms of the post-closure plan for the storage site have been determined under regulation 13(3) of the Termination Regulations.

**Post-closure plan**

2.—(1) Prior to the closure of the storage site in accordance with paragraph (1) or (2), the Storage Operator must submit a proposed post-closure plan to the OGA for approval.

(2) That proposal must be based on the provisional post-closure plan, subject to any modifications proposed by the Storage Operator.

(3) In deciding whether to propose any such modifications, the Storage Operator must take into account—

- (a) an analysis of the relevant risks;
- (b) current best practice; and
- (c) any improvements in the available technology.

**Post-closure obligations**

3.—(1) After the storage site has been closed and until the licence is terminated, the Storage Operator must continue to—

- (a) monitor the storage site in accordance with the conditions of the Storage Permit relating to monitoring, including the monitoring plan,



**General Conditions applicable to a storage site authorised under a Storage Permit granted under this licence (continued)**

- (b) comply with its reporting and notification obligations in accordance with the conditions of the Storage Permit relating to reporting and notification of leakages and significant irregularities, (with the exception of the requirement to report on the quantities, properties and composition of the carbon dioxide stream registered by the Storage Operator), and
- (c) comply with its obligations to take corrective measures in accordance with the conditions of the Storage Permit relating to corrective measures.

(2) However, for those purposes any reference to the monitoring plan or the corrective measures plan is to be read as a reference to the post-closure plan.

(3) The Storage Operator must seal the storage site and remove the injection facilities in accordance with its obligations under Part 4 of the Petroleum Act 1998.

**THIS IS SCHEDULE 4 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSAOR  
PRODUCTION (U.K.) LIMITED**

**Work Programme**

**1 Early Risk Assessment**

- 1.1 The Licensee shall:
- (a) by **14 April 2022** submit a **Risk Assessment Report** in writing to the OGA; and
  - (b) within **one (1) month** after submitting that report, convene a **Risk Assessment Workshop** at a mutually suitable date/time/venue with the OGA and relevant external technical experts as agreed with the OGA.
- 1.2 The **Risk Assessment Report** will include at a minimum:
- (a) an analysis of potential threats to containment of carbon dioxide;
  - (b) assessment of the uncertainties in defining the storage site and storage complex;
  - (c) identification of any further studies, data gathering and/or appraisal required to address any risk or uncertainties.
- 1.3 The aim of the **Risk Assessment Workshop** is to:
- (a) review the Licensee's progress on the Work Programme and other Licensee work in respect of the project;
  - (b) identify any risks to a future operational storage site including, but not limited to, any threats to containment of carbon dioxide in the storage site and storage complex and the uncertainties in defining the storage site and storage complex;
  - (c) inform the OGA of the Licensee's criteria for the assessment of the storage site and storage complex and the Licensee's acceptable level of certainty;
  - (d) identify and agree with the OGA any further risk reduction measures to be taken; and
  - (e) inform the requirements for a potential future carbon dioxide storage permit application including, but not limited to, the measurement, monitoring and verification ('**MMV**') and corrective measures ('**CM**') plans.
- 1.4 By **14 July 2022**, the Licensee shall demonstrate to the OGA's satisfaction that any further risk reduction measures agreed at the Risk Assessment Workshop have been added to the Licensee's work scope.



## Work Programme (continued)

### 2 Seismic Reprocessing

- 2.1 By **14 April 2023**, the Licensee shall reprocess and interpret 850 sq km of 3D seismic data over the storage site and storage complex.

### 3 Site Characterisation Review

- 3.1 By **14 April 2023**, the Licensee shall submit to the OGA a **Site Characterisation Review Report**, which will include but not be limited to:
- (a) the Licensee's assessment as to whether its current database is sufficient and suitable to deliver subsurface characterisation of the proposed storage complex and surrounding area as set out in regulation 7 of the Regulations in a form and of a quality suitable for inclusion in an application for a carbon dioxide storage permit as set out in paragraph 4 of this Schedule, or if further data acquisition will be required; and
  - (b) a demonstration by the Licensee of the integration of site-specific data, including but not limited to seismic data and other static and dynamic subsurface data, into an evaluation of the suitability of the storage site and storage complex for the storage of carbon dioxide.

### 4 End 'Assess' Phase Review

- 4.1 By **14 October 2024**, or, if earlier, prior to entering the 'Define' phase of the project, the Licensee shall undertake an **End 'Assess' Phase Review**, and shall submit to the OGA:
- (a) A report accompanying the End Assess Phase Review demonstrating, amongst other things:
    - i. That the storage site and storage complex characterisation is complete including identifying potential leakage pathways relating to the proposed storage site and storage complex, identification of hazards and impacts;
    - ii. A preliminary, qualitative risk assessment identifying proposed risk management measures, mitigating actions/monitoring requirements, safeguards or contingency measures; and
    - iii. An outline concept-select assessment of the pipeline/transportation, facility and well options being considered, a forecast range of injection volumes during the operational term, and the associated carbon dioxide phase management engineering considerations. The timing of well abandonment and facility removal should be considered.

### Work Programme (continued)

- (b) A preliminary monitoring, measurement, and verification (“**MMV**”) plan which should consider operational monitoring of injection facilities, baseline measurement and monitoring activities. This may include a detailed plan for a baseline 3D seismic survey including an environmental permitting plan identifying any constraints on the ability to obtain permits and execute the survey. Post-closure measurement and monitoring requirements should also be identified; and
- (c) A corrective measures feasibility study, identifying the range of potential measures that may be required to address any significant irregularities identified by the MMV plan; and
- (d) A provisional closure and post closure assessment study to address the abandonment of the injection facilities, the post closure monitoring and how the requirements for allowing handover will be met; and
- (e) The activity plan and schedule for the Define/FEED phase.

The aim of the End ‘Assess’ Phase Review is to demonstrate to the OGA, among other things;

- i. that the storage site and storage complex are fully assessed and characterised, and
- ii. the carbon dioxide transportation and facilities ‘concept’ selected by the Licensee.

## 5 Storage Permit application

- 5.1 By **14 October 2025**, the Licensee shall make an application for a storage permit in accordance with clause 9 and the application requirements; provided such application shall be supported by:
- (a) a carbon storage development plan and/or such other necessary documents and other information as required by the application requirements in a form capable of the grant of permission by the OGA (if so minded) without further clarification, amendment or submission; and
  - (b) a letter from the board of directors of the Licensee confirming that funds have been committed to the development of the storage site;

provided that where the Licensee is two or more persons, the reference to the Licensee in paragraph 5.1.(b) is a reference to each of those persons.



## Work Programme (continued)

### 6 Bunter Aquifer Appraisal

- 6.1 By **14 October 2025**, the Licensee shall undertake to drill, subject to the grant of a Storage Permit pursuant to paragraph 5, an appraisal well to determine the reservoir properties, injectivity and storage capacity of the Bunter aquifer or those parts of the licensed area containing Bunter Closures 1 and 2, or the licence shall, unless the OGA decides otherwise, determine. Subject to the grant of such Storage Permit, such well shall be drilled within **two years** after the date on which first injection occurs.

### 7 Baseline 3D Seismic Survey

- 7.1 Subject to the grant of a Storage Permit pursuant to paragraph 5, the Licensee shall shoot (acquire) a new baseline 3D seismic survey over the carbon dioxide storage site and complex. The survey shall be shot (acquired) **prior to commencement of injection**.

### 8 Application

- 8.1 In the event of failure to comply with any of the obligations set out above by the specified deadline, the OGA may, at any time after that specified deadline, by notice direct that the rights granted by the licence shall cease and determine.
- 8.2 Fulfilment of the obligations set out above is separate from and without prejudice to the requirements for the submission of an application for a Carbon Storage Permit in accordance with the application requirements at the relevant time.

### 9 Definitions

- 9.1 In this Schedule the following terms shall have the following meanings:

"application requirements" means the Regulations, the Act and any other applicable legislation in force at the time of application and applicable *Carbon dioxide storage permit application* guidance published by the OGA;

"storage site" has the meaning given to it in regulation 1 of the Regulations;

"storage complex" has the meaning given to it in regulation 1 of the Regulations.

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CS005

**THIS IS SCHEDULE 5 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSOOR  
PRODUCTION (U.K.) LIMITED**



**Storage Permit**




**Execution Page**

IN WITNESS WHEREOF, these presents typewritten on this and the preceding pages are EXECUTED AS A DEED as follows: -

**Signed for and on behalf of the Oil and Gas Authority by:**

 (signature)  (full name)  
(Director / Secretary - delete as appropriate)



on 17/12/21 (date), at  (town),


In the presence of this witness:

 (signature)  (full name)


of  (address).


**Signed\* for and on behalf of Chrysaor Production (U.K.) Limited by:**

 (signature)  (full name)  
(Director/Secretary - delete as appropriate)

on 1 DECEMBER 2021 (date), at  (town),

and either:

 (signature)  (full name)  
(Director / Secretary - delete as appropriate)

on 1 DECEMBER 2021 (date), at  (town),

or in the presence of this witness:

 (signature)  (full name)

of  (address).

\*This deed must be executed by two authorised signatories (as defined in section 44(3) Companies Act 2006). They may be either two directors or a director and the company secretary. If only one authorised signatory signs, that person must be a director of the company and a second signatory must witness the director's signature.

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CARBON DIOXIDE APPRAISAL  
AND STORAGE LICENCE CS023

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**ENERGY ACT 2008**

**SECTION 18**

**CARBON DIOXIDE APPRAISAL AND STORAGE LICENCE**

**THE OIL AND GAS AUTHORITY**

**AND**

**CHRYSAOR PRODUCTION (U.K.) LIMITED**

**BP EXPLORATION OPERATING COMPANY LIMITED**

LICENCE

in respect of exploration of a controlled place with a view to selecting a site for  
the storage of carbon dioxide.



This licence, made **04 SEPTEMBER 2023**  
between the Oil and Gas Authority, of the one part and the company listed in  
Part 1 of Schedule 1 of the other part witnesses as follows: -

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### Interpretation etc.

1.—(1) In this licence, the following expressions have the following meanings—

“the Act” means the Energy Act 2008;

“controlled place” has the meaning given to it in s.17(3), s.17(3A)(b) and s.17(4)(b) of the Act;

“Appraisal Term” means (subject to clause 6 (*Extension of Appraisal Term*) and clause 8 (*Termination of Licence*)) the period specified as such in Part 2 of Schedule 1;

“Half Year” means the period from 1st January to 30th June in any year and the period from 1st July to 31st December in any year;

“injection” means the injection of carbon dioxide streams into the storage site;

“Licensed Area” has the meaning given to it in clause 3;

“the Licensee” means the person (or all the persons) specified in Part 1 of Schedule 1 as licence holder (or joint licence holders);

“the OGA” means the Oil and Gas Authority;

“Operational Term” has the meaning given by clause 7(1) (*Operational Term and Post-Closure Period*);

“Storage Operator” means the single Licensee named as the operator in a Storage Permit;

“Petroleum” includes any mineral oil or relative hydrocarbon and natural gas existing in its natural condition in strata but does not include coal or bituminous shales or other stratified deposits from which oil can be extracted by destructive distillation;

“Post-Closure Period” has the meaning given by clause 7(2) (*Operational Term and Post-Closure Period*);

“the Regulations” means the Storage of Carbon Dioxide (Licensing etc.) Regulations 2010;<sup>1</sup>

“Start Date” means the date specified as such in Part 2 of Schedule 1;

“Storage Permit” means a permit granted in accordance with clause 9 (*Application for a storage permit*);

“the Termination Regulations” means the Storage of Carbon Dioxide (Termination of Licences) Regulations 2011;<sup>2</sup>

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1 SI 2010/2221

2 SI 2011/1483

“Work Programme” means the programme specified in Schedule 4.

“Well” includes borehole.

(2) Any reference in this licence to a numbered regulation is to that regulation of the Regulations.

(3) Any expression used in this licence which is defined in regulation 1 or in the Act and not otherwise defined in this clause has the meaning given by that regulation or by the Act.

(4) Any reference in this licence to a clause or Schedule is a reference to a clause of, or Schedule to, this licence; and any reference in a clause to a paragraph is to a paragraph of that clause.

(5) Any obligations which are to be observed and performed by the Licensee shall at any time at which the Licensee is more than one person be joint and several obligations.

### **Grant of licence**

**2.—**(1) In consideration of the performance by the Licensee of all the terms and conditions hereof, the OGA, in exercise of the powers conferred upon it by the Act, hereby grants to the Licensee exclusive licence during the continuance of this licence and subject to the provisions hereof—

- (a) to explore the Licensed Area in accordance with clause 5 (*Appraisal and storage activities*); and
- (b) if the Licensee is granted a Storage Permit in respect of a storage site within the Licensed Area, and subject to the terms and conditions of that permit, to store carbon dioxide in accordance with clause 5(2); and
- (c) to establish and maintain installations for these purposes.

### **Licensed Area**

**3.—**(1) The Licensed Area is the area for the time being in which the Licensee may exercise the rights granted by this licence and is, subject to paragraph (2), the area and, where applicable, the volume the co-ordinates and details of which are set out in Schedule 2.

(2) Where a storage permit is granted under this licence, on the grant of the storage permit the Licensed Area shall be as set out in clause 9.

### **Term of Licence**

**4.—**(1) This licence shall commence on the later of

- (a) the Start Date; and
- (b) the date on which this licence is granted.

(2) Unless sooner determined or revoked under any of its provisions, this licence shall continue—

- (a) for the Appraisal Term;
- (b) for the Operational Term; and
- (c) for the Post-Closure Period.



### **Appraisal and storage activities**

5.—(1) During the Appraisal Term, subject to the terms and conditions of this licence, the Licensee may, subject to the provisions of clause 12, carry on the following activities—

- (a) exploration (including test injection of carbon dioxide) within the Licensed Area with a view to, or in connection with, the carrying on of activities within section 17(2)(a) or (b) of the Act; and
- (b) the establishment or maintenance of installations for the purposes of such exploration.

(2) During the Operational Term and the Post-Closure Period, subject to the terms and conditions of this licence and of any Storage Permit granted under it, the Licensee may carry on the following activities—

- (a) storage of carbon dioxide (with a view to its permanent disposal) within section 17(2)(a) or (b) of the Act (including any ancillary monitoring);
- (b) exploration within the Licensed Area with a view to the carrying on of activities within section 17(2)(a) or (b) of the Act; and
- (c) the establishment or maintenance of installations for those purposes.

### **Extension of Appraisal Term**

6.—(1) At any time not later than three months before the expiry of the Appraisal Term, or such shorter notice period as the OGA may in its discretion permit, the Licensee may, subject to performance of the terms and conditions contained in this licence, give notice in writing to the OGA that it desires that term to be extended for a further period.

(2) Where notice is given in pursuance of paragraph (1) of this clause, the OGA may in its discretion direct in writing that the Appraisal Term be extended for a period and subject to such conditions as the OGA may determine, and paragraph (1) shall apply to the Appraisal Term as so extended.

(3) Where the Appraisal Term is extended under this clause, clause 4 (*Term of Licence*) shall apply in respect of that term as so extended.

### **Operational Term and Post-Closure Period**

7.—(1) The Operational Term shall be the period beginning with the date on which the Storage Permit is granted and ending with the closure of the storage site.

(2) The Post-Closure Period shall be the period beginning with the closure of the storage site, and continuing until this licence is terminated pursuant to the Termination Regulations.

### **Termination of Licence**

8.—(1) The Licensee may determine this licence or, with respect to clause 8(1)(a) only, surrender any part of the Licensed Area by giving to the OGA not less than one month's notice in writing to that effect—

- (a) before the expiry of the Appraisal Term; or
- (b) before the expiry of the Operational Term, but before the commencement of injection,

and such notice shall specify the date, no later than the expiry of the Appraisal Term or the commencement of injection as applicable, on which the determination or surrender (where applicable) shall take effect.

(2) Such determination or surrender (where applicable) shall be without prejudice to any obligation imposed upon, or liability incurred by, the Licensee under the terms and conditions of this licence.

### **Application for a storage permit**

**9.**—(1) An application for a storage permit may be made, in accordance with the Regulations, in respect of a storage site situated in the Licensed Area ('Storage Permit').

(2) If a Storage Permit is granted:

- (a) it shall be annexed as Schedule 5 to this licence;
- (b) subject to regulation 12, the conditions set out in Schedule 3 to this licence shall apply in respect of the storage site authorised under that Storage Permit; and
- (c) unless the OGA directs otherwise, with effect on and from the date of grant of the Storage Permit the Licensed Area shall be reduced such that the Licensed Area shall be the area, volume or both as applicable of the storage site, details of which shall be set out in Schedule 5, and Schedule 2 shall be amended accordingly, and this licence shall cease and determine in respect of any area or volume that no longer forms part of the Licensed Area but without prejudice to any obligation or liability imposed upon the Licensee or incurred by them under the terms of this licence prior to that date.

### **Provision of contact details to the OGA**

**10.**—(1) A notice, direction or other document authorised or required (in whatever terms) to be given to the Licensee by virtue of this licence is treated as given to the Licensee if it is given to the person specified by the Licensee under paragraph (2) at the address so specified.

(2) The Licensee must supply the OGA with the name and address of a person to whom notices, directions and other documents are to be given.

(3) The Licensee must ensure that, where there is a change in the person to whom, or the address to which, information should be sent in accordance with paragraph (2), the OGA is notified of the change as soon as is reasonably practicable.

(4) If the Licensee fails to comply with paragraph (2) the OGA may give the Licensee a notice which—

- (a) requires the Licensee to comply with paragraph (2) within the period of 30 days beginning with the date of the notice; and



- (b) states that, if the Licensee fails to do so, the Licensee will be treated as having supplied under paragraph (2) the name and address specified by the OGA in the notice.

**Keeping of accounts**

11.—(1) The Licensee shall keep within the United Kingdom full and correct accounts in a form from time to time approved by the OGA of—

- (a) the quantity of the carbon dioxide stream injected into the Licensed Area;
- (b) the composition of the carbon dioxide stream injected into the Licensed Area;
- (c) the name and address of any person who has supplied the carbon dioxide stream to the Licensee, the quantity so supplied, and the place the carbon dioxide stream was conveyed from pursuant to the agreement for such supply; and
- (d) such other particulars as the OGA may from time to time require.

(2) The Licensee shall within two months after the end of each Half Year in which this licence is in force and within two months after the expiration or determination of this licence, subject to the Termination Regulations, deliver to the OGA an abstract in a form from time to time approved by the OGA of the accounts for that Half Year or for the period prior to such expiration or determination as the case may be.

**Working obligations**

12.—(1) If a Work Programme is specified in Schedule 4, the Licensee shall before the expiry of the Appraisal Term carry out the Work Programme in accordance with the deadlines specified therein.

(2) If at any time the OGA serves a notice in writing on the Licensee requiring them to submit to the OGA, before a date specified in the notice, an appropriate programme for exploration with a view to selecting a site for carbon dioxide storage in the Licensed Area during a period so specified, the Licensee shall comply with the notice.

(3) For the purposes of paragraph (2), an appropriate programme is one which any person who, if that person—

- (a) were entitled to carry on the activities authorised by this licence;
- (b) had the competence and resources needed to carry on those activities to the best commercial advantage; and
- (c) were seeking to carry on those activities to the best commercial advantage,

could reasonably be expected to carry out during the period specified in the notice, and that period must be within the Appraisal Term.

(4) If a programme is submitted to the OGA in consequence of a notice served under paragraph (2), then—

- (a) the OGA shall not be entitled to revoke this licence on the ground that the programme does not satisfy the requirements of that paragraph (“the Relevant Requirements”); but
- (b) if the OGA is of the opinion that the programme does not satisfy the Relevant Requirements it may serve a notice in writing on the Licensee stating its opinion and the reasons for it.

(5) Where notice in respect of a programme is served on the Licensee under paragraph (4) the Licensee shall within a reasonable period beginning with the date of service of such notice submit to the OGA a further programme which satisfies the Relevant Requirements.

(6) The Licensee shall carry out any programme submitted by them under this clause in respect of which the OGA serves notice in writing on the Licensee stating that the OGA approves the programme and any programme approved by the OGA under this paragraph shall be deemed for the purposes of this licence to satisfy the Relevant Requirements.

(7) Where, in consequence of any breach or non-observance by the Licensee of any provision of paragraph (2), (5) or (6), the OGA has power by virtue of paragraph (1) of clause 33 (*Revocation of licence*) to revoke this licence, it may if it thinks fit exercise that power in relation to such part only of the Licensed Area as it may specify; and where it does so the rights granted by this licence shall cease in respect of the specified part of that area without prejudice to any obligation or liability imposed upon the Licensee or incurred by them under the terms of this licence.

(8) Where the Licensee has a duty by virtue of this clause to carry out a programme during a part of the Appraisal Term, the OGA may serve notice under paragraph (2) in respect of another such part.

### **Amendments to the Work Programme**

**13.**—(1) This clause applies if a Work Programme has been specified in Schedule 4.

(2) This clause applies to an amendment to be made to the content of the Work Programme (including to the deadline for taking an action).

(3) At any time not later than three months before the deadline for taking an action in the Work Programme the Licensee may give notice in writing to the OGA that the Licensee desires an amendment regarding that action, and the notice shall describe the proposed amendment.

(4) The OGA may in its discretion permit a shorter notice period than the period of three months specified in paragraph (3).

(5) Where notice is given, the OGA may in its discretion direct in writing that the Work Programme be amended as proposed.



**Relevant Works**

**14.**—(1) The Licensee shall not erect or carry out any Relevant Works in a controlled place, either in the Licensed Area or elsewhere, for the purposes of—

(a) the storage of carbon dioxide within section 17(2)(a) of the Act in the Licensed Area; or

(b) the conveyance of carbon dioxide for storage in the Licensed Area, except in accordance with the consent in writing of the OGA.

(2) The document in which that consent is given may be a storage permit.

(3) The document in which that consent is given may specify—

(a) any conditions to which the consent is subject; and

(b) a period to which the consent is limited.

(4) In this clause, “Relevant Works” means any structure and any other works (of any kind) which are intended by the Licensee to be permanent and are neither designed to be moved from place to place without major dismantling nor intended by the Licensee to be used only for exploring for places suitable for the storage of carbon dioxide.

**Commencement and abandonment and plugging of Wells, and test injection**

**15.**—(1) The Licensee shall not commence or recommence the drilling of any Well, or undertake the test injection of carbon dioxide, without the consent in writing of the OGA.

(2) Subject to paragraph (6), the Licensee shall not abandon any Well without the consent in writing of the OGA.

(3) The Licensee shall ensure compliance with any conditions subject to which any consent under either of the foregoing paragraphs is given.

(4) If any such condition under paragraph (1) relates to the position, depth or direction of the Well, or to any casing of the Well or if any condition under either paragraph (1) or paragraph (2) relates to any plugging or abandoning of the Well, the OGA may from time to time direct that the Well and all records relating thereto shall be examined in such manner, upon such occasions or at such intervals and by such person as may be specified by the OGA’s direction, and the Licensee shall pay to the OGA such fees and expenses for such examination as the OGA may specify.

(5) The plugging of any Well shall be done in accordance with a specification approved by the OGA applicable to that Well or to Wells generally or to a class of Wells to which that Well belongs and shall be carried out in an efficient and workmanlike manner.

(6) The OGA may at any time give the Licensee a notice requiring a Well drilled pursuant to this licence to be plugged and abandoned in accordance

with paragraph (5) within the period specified in the notice (but this paragraph is subject to paragraphs (8) and (9)).

(7) The Licensee shall comply with any notice under paragraph (6).

(8) A notice under paragraph (6) may not be given less than one month before the expiry or determination of the Licensee's rights under this licence in relation to the area, or the part of the area, in which the well is drilled.

(9) A notice under paragraph (6) may be given only in relation to a well which has not been used within the period of one year ending with the day on which the notice is given.

(10) Subject to paragraphs (6), (7), (11) and (12), any Well drilled by the Licensee pursuant to this licence shall be plugged and abandoned in accordance with paragraphs (2), (3), (4) and (5), not less than one month before the expiry or determination of the Licensee's rights in respect of the area or part thereof in which that Well is situated.

(11) A direction by the OGA may be given by notice in writing to the Licensee not less than one month before the Licensee's rights in respect of the area or part thereof in which the Well is situated expire or determine so as to relieve the Licensee of the obligation imposed by paragraph (10) of this clause to plug and abandon the Well.

(12) Where the OGA terminates or revokes this licence, any Well drilled pursuant to this licence shall—

- (a) be plugged and abandoned in accordance with paragraphs (2), (3), (4) and (5), as soon as reasonably practicable; or
- (b) if the OGA so directs when giving the notice of termination or revocation, be left in good order and fit for further working together with all casings and any Well head fixtures (where applicable) the removal whereof would cause damage to such Wells.

(13) Any Well that, pursuant to a direction by the OGA under paragraph (11), has not been plugged and abandoned, shall be left in good order and fit for further working together with all casings and any Well head fixtures (where applicable) the removal whereof would cause damage to such Wells.

(14) Unless the OGA directs otherwise, all casings and fixtures forming part of a Well and left in position at the expiry or determination (whether by termination, revocation or otherwise) of the Licensee's rights in respect of the area or part thereof in which that Well is drilled, or at the completion of any works required of the Licensee under paragraph (12) (whichever is the later), shall be the property of the OGA.

### **Control of Development Wells**

**16.—**(1) The Licensee shall not suspend work on the drilling of a Development Well, or having suspended it in accordance with this paragraph shall not begin it again except with the consent in writing of the OGA and in accordance with the conditions, if any, subject to which the consent is given.

(2) When work on the drilling of a Development Well is suspended in accordance with paragraph (1) of this clause, the Licensee shall forthwith



furnish the OGA with such information relating to the Well as the OGA may specify.

(3) The Licensee—

- (a) shall not do any Completion Work in respect of a Well in the Licensed Area except with the consent in writing of the OGA and in accordance with the conditions, if any, subject to which the consent is given;
- (b) shall furnish to the OGA, in accordance with the provisions of such a consent, particulars of any Completion Work done by the Licensee in respect of the Well; and
- (c) shall not remove or alter any casing or equipment installed by way of Completion Work in respect of a Well except with the consent in writing of the OGA and in accordance with the conditions, if any, subject to which the consent is given.

(4) In this clause—

“Completion Work”, in relation to a Well, means work, by way of the installation of a casing or equipment or otherwise after the Well has been drilled, for the purpose of bringing the Well into use as a Development Well; and

“Development Well” means a Well which the Licensee uses or intends to use in connection with the storage of carbon dioxide in the Licensed Area, other than a Well which for the time being he uses or intends to use only for activities pursuant to clause 5(1).

### **Distance of Wells within boundaries of Licensed Area**

17. No Well shall, except with the consent in writing of the OGA, be drilled or made so that any part thereof is less than one hundred and twenty-five metres from any of the boundaries of the Licensed Area.

### **Extraction of stored carbon dioxide**

18. The Licensee must not (and must not permit any other person to) extract stored carbon dioxide from the storage site except with the prior written consent of the OGA and in accordance with any conditions subject to which any such consent is given.

### **Avoidance of harmful methods of working**

19.—(1) The Licensee shall maintain all apparatus and appliances and all Wells in the Licensed Area which have not been abandoned and plugged as provided by clause 15 (*Commencement and abandonment and plugging of Wells, and test injection*) in good repair and condition and shall execute all operations in or in connection with the Licensed Area in a proper and workmanlike manner in accordance with methods and practice customarily used in good industry practice and in particular the Licensee shall take all steps practicable in order to prevent damage to adjoining strata. The Licensee shall give notice to the OGA of any event causing the escape or waste of Petroleum or the escape of carbon dioxide from the carbon dioxide stream or

damage to any petroleum-bearing strata or any carbon dioxide storage site forthwith after the occurrence of that event.

(2) The Licensee shall comply with any instructions from time to time given by the OGA in writing relating to any of the matters set out in the foregoing paragraph.

(3) In this clause, “good industry practice” means the exercise of that degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled and experienced operator engaged in an activity consented to or authorised by or under this licence.

### **Appointment of exploration operators**

**20.**—(1) The Licensee shall ensure that another person (including, in the case where the Licensee is two or more persons, any of those persons) does not exercise any function of organising or supervising any activity described in clause 5(1) (*Appraisal and storage activities*) in pursuance of this licence unless that other person is a person approved in writing by the OGA and the function in question is one to which that approval relates.

(2) The OGA shall not refuse to give its approval of a person in pursuance of paragraph (1) if that person is competent to exercise the function in question, but where an approved person is no longer competent to exercise that function the OGA may, by notice in writing given to the Licensee, revoke its approval.

### **Fishing and navigation**

**21.** The Licensee shall not carry out any operations in or about the Licensed Area in such manner as to interfere unjustifiably with navigation or fishing in the waters of the Licensed Area or with the conservation of the living resources of the sea.

### **Training**

**22.**—(1) The OGA may from time to time (after consulting the Licensee) give to the Licensee instructions in writing as to the training of persons employed or to be employed, whether by the Licensee or by any other person, in any activity which is related to the exercise of the rights granted by this licence, and the Licensee shall ensure that any instructions so given are complied with.

(2) The Licensee shall furnish the OGA with such information relating to the training of persons referred to in paragraph (1) of this clause as the OGA may from time to time request.

### **Licensee to keep records**

**23.**—(1) The Licensee shall keep accurate records in a form from time to time approved by the OGA of the drilling, deepening, plugging or abandonment of all Wells and of any alterations in the casing thereof. Such records shall contain particulars of the following matters—



- (a) the site of and number assigned to every Well;
- (b) the subsoil and strata through which the Well was drilled;
- (c) the casing inserted in any Well and any alteration to such casing;
- (d) any Petroleum, water, mines or workable seams of coal encountered in the course of such activities; and
- (e) such other matters as the OGA may from time to time direct.

(2) The Licensee shall keep within the United Kingdom accurate geological plans and maps relating to the Licensed Area and such other records in relation thereto as may be necessary to preserve all information which the Licensee has about the geology of the Licensed Area.

(3) The Licensee shall deliver copies of the said records, plans and maps referred to in the two foregoing paragraphs to the OGA when requested to do so either—

- (a) within any time limit specified in the request; or
- (b) if there is no time limit specified, within four weeks of the request.

**Returns**

**24.**—(1) The Licensee shall furnish the OGA with such information and in such manner as the OGA may from time to time request about any of the activities authorised by this licence.

(2) The Licensee shall comply with any such request either—

- (a) within any time limit specified in the request; or
- (b) if there is no time limit specified, within four weeks of the request.

**Licensee to keep samples**

**25.**—(1) As far as reasonably practicable the Licensee shall correctly label and preserve for reference for a period of five years samples of the sea bed and of the strata encountered in any Well and samples of any Petroleum or water discovered in any Well in the Licensed Area.

(2) The Licensee shall not dispose of any sample after the expiry of the said period of five years unless—

- (a) the Licensee has at least six months before the date of the disposal given notice in writing to the OGA of its intention to dispose of the same; and
- (b) the OGA or any person authorised by it has not within the said period of six months informed the Licensee in writing that it wishes the sample to be delivered to it.

(3) The OGA or any person authorised by it shall be entitled at any time—

- (a) to inform the Licensee in writing that it wishes the whole or any part of any sample preserved by the Licensee to be delivered to the OGA; or
- (b) to inspect and analyse any sample preserved by the Licensee.

(4) The Licensee shall forthwith comply with any request for the delivery of the whole or any part of any sample which is made in accordance with the preceding provisions of this clause.

**Reports to be treated as confidential**

**26.**—(1) All records, returns, plans, maps, samples, accounts and information (in this clause referred to as “the specified data”) which the Licensee is or may from time to time be required to furnish under the provisions of this licence shall be supplied at the expense of the Licensee and shall not (except with the consent in writing of the Licensee which shall not be unreasonably withheld) be disclosed to any person not in the service or employment of the OGA or the Crown—

Provided that—

- (a) the OGA shall be entitled at any time to make use of any of the specified data for the purpose of preparing and publishing such returns and reports as may be required of the OGA by law;
- (b) the OGA shall be entitled at any time to furnish any of the specified data to the Natural Environment Research Council and to any other body of a like nature as may from time to time be carrying on activities of a substantially similar kind to the geological activities at present carried on by the said Council;
- (c) the OGA, the said Council and any such other body shall be entitled at any time to prepare and publish reports and surveys of a general nature using information derived from any of the specified data;
- (d) the OGA, the said Council and any other such body shall be entitled to publish any of the specified data of a geological, scientific or technical kind either—
  - (a) after the expiration of the period of three years beginning with the date when the data were due to be supplied to the OGA in accordance with clause 23 (*Licensee to keep records*) or 24 (*Returns*), or if earlier, the date when the OGA received those data;
  - (b) after the licence ceases to have effect, whether because of its determination, revocation or termination pursuant to the Termination Regulations; or
  - (c) after the expiration of such longer period as the OGA may determine after considering any representations made to it by the Licensee about the publication of data in pursuance of this sub-paragraph.

(2) This clause shall not prevent the publication by the OGA of the results of any monitoring required by any Storage Permit granted pursuant to this licence.



**Inspection of records etc.**

27. The Licensee shall—

- (a) permit any person who is appointed by the OGA for the purpose to inspect, and to take copies of and make notes from, all books, papers, maps and other records of any kind kept by the Licensee in pursuance of this licence or in connection with activities about which the OGA is entitled to obtain information in pursuance of clauses 22(2) (*Training*) and 24 (*Returns*) of this licence; and
- (b) furnish that person at reasonable times with such information and provide them at reasonable times with such reasonable assistance as that person may request in connection with or arising out of an inspection in pursuance of this clause.

**Rights of access**

28. Without prejudice to the OGA's rights under the Regulations and the Act, any person or persons authorised by the OGA shall be entitled at all reasonable times to enter into and upon any of the Licensee's installations or equipment used or to be used in connection with the activities authorised by this licence—

- (a) to examine the installations, Wells, plant, appliances and works made or executed by the Licensee in pursuance of the licence and the state of repair and condition thereof; and
- (b) to execute any works, to carry out any monitoring or to provide and install any equipment which the OGA may be entitled to execute, carry out or provide and install in accordance with the provisions of this licence or in the execution of any powers under the Regulations or the Act.

**Power to execute works**

29. Without prejudice to the OGA's rights under the Regulations and the Act, if the Licensee shall at any time fail to perform the obligations arising under the terms and conditions of either of clauses 15 (*Commencement and abandonment and plugging of Wells, and test injection*) or 19 (*Avoidance of harmful methods of working*), the OGA shall be entitled, after giving to the Licensee reasonable notice in writing of its intention, to execute any works and to provide and install any equipment which in the opinion of the OGA may be necessary to secure the performance of the said obligations or any of them and to recover the costs and expenses of so doing from the Licensee.

**Transfer of licence etc.**

30. The Licensee shall not, except with the consent in writing of the OGA and in accordance with the conditions (if any) of the consent, do anything whatsoever whereby, under the law (including the rules of equity) of any part of the European Union or of any other place, any right granted by this Licence or derived from a right so granted becomes exercisable by or for the benefit of or in accordance with the directions of another person.

**Change in control of Licensee**

- 31.**— (1) This clause applies if—
- (a) the Licensee is a company, or
  - (b) where two or more persons are the Licensee, any of those persons is a company,
- and references in this clause to a company are to such a company.
- (2) A change in control of a company is not permitted without the consent of the OGA.
- (3) There is a “change in control” of a company if a person takes control of the company, not having previously been a person who controlled the company.
- (4) If a change in control of a company is contemplated, the company must apply in writing to the OGA for consent at least three months before the date on which it is proposed that the change would occur (if consent were given).
- (5) The OGA may—
- (a) consent to the change in control unconditionally,
  - (b) consent to the change in control subject to conditions, or
  - (c) refuse consent to the change in control.
- (6) If the OGA proposes to grant consent subject to any condition or to refuse consent, the OGA must, before making a final decision—
- (a) give the company an opportunity to make representations, and
  - (b) consider any representations that are made.
- (7) The OGA will normally aim to make its decision on an application within three months of receiving it, but the OGA may delay its decision by notifying the interested parties in writing.
- (8) Conditions as mentioned in paragraph (5)(b) may be imposed on the person taking control of the company (as well as on the company), and may include—
- (a) conditions relating to the arrangements for the change in control, including the date by which it must occur,
  - (b) conditions relating to the performance of activities permitted by this licence, and
  - (c) financial conditions.
- (9) The OGA’s decision on the application, and any conditions as mentioned in paragraph (5)(b), must be notified in writing to the interested parties.
- (10) In this clause “the interested parties” means—
- (a) the company,
  - (b) the person who (if consent were granted) would take control of the company, and



- (c) if the company and another person or persons are the Licensee, that other person or those other persons.

(11) For the purposes of this clause, “control” of a company is to be construed in accordance with sections 450(2) to (4) and 451(1) to (5) of the Corporation Tax Act 2010, modified as specified in clause 31(12).

(12) The modifications of sections 450(2) to (4) and 451(1) to (5) of the Corporation Tax Act 2010 referred to in paragraph (11) are—

- (a) for the words “the greater part” wherever they occur in section 450(3), there shall be substituted the words “one-third or more”;
- (b) in section 451(4) and (5), for the word “may”, there shall be substituted the word “must”; and
- (c) in section 451(4) and (5) any reference to an associate of a person shall be construed as including only—
  - i. a relative (as defined in section 448(2) of that Act) of the person;
  - ii. a partner of the person; and
  - iii. a trustee of a settlement (as defined in section 620 of the Income Tax (Trading and Other Income) Act 2005) of which the person is a beneficiary.

**OGA’s power to require information about change in control of licence holder**

**31A.**—(1) The OGA may by notice in writing require a person within paragraph (2) to provide the OGA with any information that it requires for the purpose of exercising its functions in relation to a change or potential change in control of a licence holder which is a company.

(2) The persons within this paragraph are—

- (a) the company;
- (b) the person who (if consent were granted) would take control of the company;
- (c) if the company is a joint licence holder with another person or other persons, that other person or those other persons;
- (d) any person not within any of paragraphs (a) to (c) who appears to the OGA to have information that it requires as mentioned in paragraph (1).

(3) The power conferred by this section does not include power to require the provision of any information that would be protected from disclosure or production in legal proceedings on grounds of legal professional privilege or, in Scotland, confidentiality of communications.

### Indemnity against third party claims

**32.** The Licensee shall at all times keep the OGA effectually indemnified against all actions, proceedings, costs, charges, claims and demands whatsoever which may be made or brought against the OGA by any third party in relation to or in connection with this licence or any matter or thing done or purported to be done in pursuance thereof.

### Revocation of licence

**33.—**(1) Without prejudice to the rights of the OGA under the Regulations and the Act, if any of the events specified in paragraph (3) occurs then the OGA may (by giving the Licensee notice in writing to that effect) revoke this licence with effect from the date specified in the notice.

(2) If the OGA exercises the power in paragraph (1), the rights granted to the Licensee by this licence shall cease and determine; but subject nevertheless and without prejudice to any obligation imposed upon, or liability incurred by, the Licensee under the terms and conditions of this licence.

(3) The events specified by this paragraph are—

- (a) any breach or non-observance by the Licensee of any of the terms and conditions of this licence;
- (b) in Great Britain, the bankruptcy or sequestration of the Licensee;
- (c) in Great Britain, the making by the Licensee of any arrangement or composition with its creditors;
- (d) in Great Britain, if the Licensee is a company, the appointment of a receiver or administrator or any liquidation whether compulsory or voluntary;
- (e) in a jurisdiction other than Great Britain, the commencement of any procedure or the making of any arrangement or appointment substantially corresponding to any of those mentioned in sub-paragraphs (b) to (d) of this paragraph.
- (f) where a statement has been made by the Licensee which is known to be false in a material particular, or recklessly makes a statement which is false in a material particular, for the purpose of inducing the OGA –
  - (a) to grant this licence;
  - (b) to grant a consent under this licence; or
  - (c) to grant an approval under this licence,

and where two or more persons are the Licensee any reference to the Licensee in sub-paragraphs (b) to (f) of this paragraph is a reference to any of those persons.



**Revocation of licence re change in control**

**34.**—(1) This clause applies in connection with a change in control of a licence holder which is a company (see clause 31).

(2) In the event of—

- (a) any breach or non-observance by the company of the terms of clause 31,
- (b) any breach of a condition (imposed in accordance with clause 31) subject to which the OGA gave its consent to a change of control of the company, or
- (c) any failure to provide full and accurate information in response to a notice given by the OGA pursuant to clause 31A

the OGA may, giving the company and any joint licence holders notice in writing, revoke the licence with effect from the date specified in the notice.

**Power of partial revocation**

**35.**—(1) This clause applies where two or more persons are the Licensee and an event mentioned in clause 33(3)(b), (c), (d), (e) or (f) occurs in relation to one of those persons.

(2) Where this clause applies, the OGA may exercise the power of revocation in clause 33 to revoke the licence in so far as it applies to the person mentioned in paragraph (1).

(3) If the OGA exercises the power in paragraph (2), the rights granted to the person under this licence cease, but without prejudice to any obligation imposed upon, or liability incurred by, the person under the terms and conditions of this licence.

(4) Where this licence is revoked in relation to one person under this clause, it continues to have effect in respect of the other person who constitutes, or persons who together constitute, the Licensee and in relation to whom it is not revoked.

**Partial revocation of licence re change in control**

**36.**—(1) This clause applies where two or more persons are joint licence holders and any of them is a company.

(2) If any event mentioned in clause 34(2)(a), (b) or (c) occurs in connection with a change in control of the company, the OGA may exercise the power in clause 34 to revoke the licence in so far as it applies to that company.

(3) Where this licence is revoked in relation to one person under this clause, it continues to have effect in respect of the other person who constitutes, or persons who together constitute, the Licensee and in relation to whom it is not revoked.

**Ministry of Defence**

**37.**—(1) The Licensee shall give the Ministry of Defence six months' prior notice of any installation movements within the Licensed Area.

(2) The Licensee shall give the Ministry of Defence six weeks' prior notice of any seismic survey within the Licensed Area.

(3) The Licensee shall, at the Licensee's own expense, install and maintain underwater sonar beacons to Ministry of Defence specifications on any structures that may be temporarily within the Licensed Area provided that there shall be no requirement to fit such beacons to fixed and charted installations.

### **Relationship with fishing industry**

**38.**—(1) The Licensee shall appoint a fisheries liaison officer who shall agree suitable arrangements with the seismic survey and supply vessel owners employed by the Licensee, their masters and the organisations or individuals which represent the local fishing industry in order to promote good working relationships between the various parties. The setting up of the arrangements shall be the responsibility of the Licensee. In particular the Licensee shall—

- (a) consult the organisations which represent the local fishing industry about the sea routes to be used by supply vessels;
- (b) after informing the OGA of the result of such consultations, agree with the OGA which routes shall be used to minimise interference with fishing activities without thereby unreasonably increasing transit times;
- (c) ensure that the agreed routes are used unless safety of navigation or security of cargo considerations dictate otherwise; and
- (d) take all reasonable steps to ensure that a responsible person who is fluent in English is a member of the crew of the supply vessel.

(2) The Licensee shall make every effort to locate and remove, without unreasonable delay, any debris resulting from the licensed activities. The Licensee shall consult the relevant fishing organisations on the method of clearance and inform the OGA of the result of such consultation. If as a result of such consultation the OGA determines that the method of clearance of debris should be modified, such modifications shall be observed by the Licensee.

(3) Claims for damage to or loss of gear or loss of fishing time arising from reported debris shall be dealt with promptly by the Licensee.

### **Relationship with other users**

**39.** Without prejudice to clause 37 (*Ministry of Defence*) and clause 38 (*Relationship with fishing industry*), when planning any activity or operation under this licence, the Licensee shall take into consideration any activities being undertaken, or likely to be undertaken, in the licensed area or that impact, or are likely to impact, such licence activities or operations.



### Discovery of Petroleum

**40.**—(1) This paragraph applies where the Licensee—

- (a) becomes aware, whether by means of a geological survey or otherwise, of the presence of any amount of Petroleum at a place within the Licensed Area;
- (b) is not the holder of a Petroleum Licence entitling the holder to search and bore for and get Petroleum in and from that place; and
- (c) has not entered into any agreement with the holder of such a Petroleum Licence, and in accordance with its provisions, entitling the Licensee to the Petroleum got from that place.

(2) When paragraph (1) applies the Licensee shall, as soon as is reasonably practicable—

- (a) notify the OGA of such presence of Petroleum in writing; and
- (b) comply with any directions given by the OGA.

(3) For the purposes of paragraph (1), “Petroleum Licence” means a licence under section 3 of the Petroleum Act 1998 or section 2 of the Petroleum (Production) Act 1934.

### Arbitration

**41.**—(1) If at any time any dispute, difference or question shall arise between the OGA and the Licensee as to any matter arising under or by virtue of this licence or as to their respective rights and liabilities in respect thereof then the same shall, except where it is expressly provided by this licence that the matter or thing to which the same relates is to be determined, decided, directed, approved or consented to by the OGA, be referred to arbitration as provided by the following paragraphs.

- (a) The arbitration referred to in the foregoing paragraph shall be by a single arbitrator who, in default of agreement between the OGA and the Licensee as to its appointment, shall be appointed by the Lord Chief Justice of England for the time being.

(2) This clause does not affect the power of the OGA to institute (or authorise the institution) of criminal proceedings, to apply for an injunction, or to give any direction or notice, under any provision contained in Chapter 3 of Part 1 of the Act.

(3) This clause does not apply to any matter arising under the provisions of the Storage Permit.

### Counterpart Execution

**42.** This licence may be executed in any number of counterparts with the same effect as if the signatures on the counterparts were a single engrossment thereof PROVIDED THAT this licence shall not be completed until each party has signed a counterpart.

**THIS IS SCHEDULE 1 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSAOR  
PRODUCTION (U.K.) LIMITED AND BP EXPLORATION OPERATING  
COMPANY LIMITED**

PART 1

**Companies**

Chrysaor Production (U.K.) Limited, with registered address of 23 Lower Belgrave Street, London, England, SW1W 0NR (registered number 00524868).

bp Exploration Operating Company Limited, with registered address of Chertsey Road, Sunbury On Thames, Middlesex, TW16 7BP (registered number 00305943).

PART 2

The **Start Date** is 1 September 2023.

The **Appraisal Term** is the period 6 years beginning at the Start Date.



**THIS IS SCHEDULE 2 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSAOR  
PRODUCTION (U.K.) LIMITED AND BP EXPLORATION OPERATING  
COMPANY LIMITED**

**Licensed Area**

A polygon, the boundary of which is defined by parallels of Latitude and Meridians joining the following points, as defined on European Datum First Adjustment 1950 (ED50):

- |     |               |                |
|-----|---------------|----------------|
| 1)  | 53° 21' 00" N | 002° 03' 00" E |
| 2)  | 53° 21' 00" N | 002° 06' 00" E |
| 3)  | 53° 20' 00" N | 002° 06' 00" E |
| 4)  | 53° 20' 00" N | 002° 08' 00" E |
| 5)  | 53° 12' 00" N | 002° 08' 00" E |
| 6)  | 53° 12' 00" N | 001° 51' 00" E |
| 7)  | 53° 20' 00" N | 001° 51' 00" E |
| 8)  | 53° 20' 00" N | 001° 56' 00" E |
| 9)  | 53° 26' 00" N | 001° 56' 00" E |
| 10) | 53° 26' 00" N | 002° 03' 00" E |
| 11) | 53° 21' 00" N | 002° 03' 00" E |

The lines joining coordinates (1) to (11) are navigated by loxodromes.

**THIS IS SCHEDULE 3 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSAOR  
PRODUCTION (U.K.) LIMITED AND BP EXPLORATION OPERATING  
COMPANY LIMITED**

**General Conditions applicable to a storage site authorised under a  
Storage Permit granted under this licence**

**Closure of storage site by the operator**

- 1.—(1) The Storage Operator must close the storage site where the conditions for closure set out in the Storage Permit are met.
- (2) The Storage Operator may close the storage site if—
- (a) the consent in writing of the OGA has been given following an application under sub-paragraph (3), and
  - (b) any conditions attached to that consent have been met.
- (3) An application for the OGA's consent to the closure of the storage site must—
- (a) be made in writing and sent to the OGA, and
  - (b) contain the reasons why the Storage Operator proposes to close the storage site.
- (4) However, a storage site may not be closed under sub-paragraph (1) or (2) until the terms of the post-closure plan for the storage site have been determined under regulation 13(3) of the Regulations.

**Post-closure plan**

- 2.—(1) Prior to the closure of the storage site in accordance with paragraph (1) or (2), the Storage Operator must submit a proposed post-closure plan to the OGA for approval.
- (2) That proposal must be based on the provisional post-closure plan, subject to any modifications proposed by the Storage Operator.
- (3) In deciding whether to propose any such modifications, the Storage Operator must take into account—
- (a) an analysis of the relevant risks;
  - (b) current best practice; and
  - (c) any improvements in the available technology.

**Post-closure obligations**

- 3.—(1) After the storage site has been closed and until the licence is terminated, the Storage Operator must continue to—
- (a) monitor the storage site in accordance with the conditions of the Storage Permit relating to monitoring, including the monitoring plan,



**THIS IS SCHEDULE 3 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSAOR  
PRODUCTION (U.K.) LIMITED AND BP EXPLORATION OPERATING  
COMPANY LIMITED**

**General Conditions applicable to a storage site authorised under a  
Storage Permit granted under this licence (continued)**

- (b) comply with its reporting and notification obligations in accordance with the conditions of the Storage Permit relating to reporting and notification of leakages and significant irregularities, (with the exception of the requirement to report on the quantities, properties and composition of the carbon dioxide stream registered by the Storage Operator), and
  - (c) comply with its obligations to take corrective measures in accordance with the conditions of the Storage Permit relating to corrective measures.
- (2) However, for those purposes any reference to the monitoring plan or the corrective measures plan is to be read as a reference to the post-closure plan.
- (3) The Storage Operator must seal the storage site and remove the injection facilities in accordance with its obligations under Part 4 of the Petroleum Act 1998.

**THIS IS SCHEDULE 4 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSAOR  
PRODUCTION (U.K.) LIMITED AND BP EXPLORATION OPERATING  
COMPANY LIMITED**

**Work Programme**

**1 Early Risk Assessment**

1.1 The Licensee shall:

- (a) by **29<sup>th</sup> February 2024** (unless the OGA agrees otherwise) submit an Early Risk Assessment Report in writing to the OGA;
- (b) within one (1) month after submitting that Report, convene a Risk Assessment Workshop at a mutually suitable date/time/venue with the OGA and relevant external technical experts as agreed with the OGA; and
- (c) within one (1) month from the Risk Assessment Workshop demonstrate to the OGA's satisfaction that any further risk reduction measures agreed following the Risk Assessment Workshop have been added to the Licensee's approved work plan.

1.2 The Early Risk Assessment Report will include at a minimum:

- (a) an analysis of potential threats to capacity for, and injectivity and containment of, carbon dioxide;
- (b) assessment of the uncertainties in defining the storage sites and storage complexes including injectivity and capacity; and
- (c) identification of any further studies, data gathering and/or appraisal required to address any risk or uncertainties.

**2 Proprietary Seismic Reprocessing**

2.1 The Licensee shall:

- (a) by **31<sup>st</sup> August 2025** obtain, reprocess and interpret a minimum of 600 sq kms fully migrated, proprietary 3D seismic data providing full coverage of and optimised to support site characterisation of the Rotliegend candidate storage sites, complex(es) and overburden, and provide the relevant data to the OGA if requested; and;
- (b) by **31<sup>st</sup> August 2025** provide for public release via the National Data Repository the reprocessed data generated as part of the seismic reprocessing under paragraph 2.1(a) above.



**THIS IS SCHEDULE 4 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSAOR  
PRODUCTION (U.K.) LIMITED AND BP EXPLORATION OPERATING  
COMPANY LIMITED**

**Work Programme (continued)**

**3 Firm Studies**

3.1 The Licensee shall:

- (a) by **31<sup>st</sup> August 2024** complete a geomechanical study on the South Valiant field to understand the effects of depletion and recharge on the Rotliegend storage interval;
- (b) by **31<sup>st</sup> August 2025** complete fault seal studies to address uncertainty related to compartmentalisation, fault reactivation and fault stability; and
- (c) by **28<sup>th</sup> February 2026** perform multi-stage core analysis to address uncertainties as they relate to the conformance of CO<sub>2</sub> within the storage sites.

And in the case of each of paragraphs 3.1(a) to (c), the Licensee shall provide the raw data from these analyses for public release via the National Data Repository.

**4 Contingent Studies**

4.1 The Licensee shall by **30<sup>th</sup> November 2026** perform Special Core Analysis (SCAL) using proprietary Digital Rock technology provided that the Licensee shall not be required to do so if the OGA confirms in writing that the Licensee has demonstrated to the OGA's satisfaction, on the basis of analysis and other work presented, that the acquisition of further data is not a good (technical or economic) mitigation for the uncertainty of CO<sub>2</sub> containment.

4.2 Unless the proviso in paragraph 4.1 applies and the OGA agrees that the relevant studies are not required to be carried out, the Licensee shall release the raw data from the Digital Rocks study for public release via the National Data Repository.

**5 Assess/Pre-FEED Plan**

5.1 The Licensee shall submit to the OGA an Assess/Pre-FEED phase activity plan and schedule for the Vulcan store and any other stores as are due to be included in the Site Characterisation Review Report set out in paragraph 6, three (3) months prior to entering the Site Characterisation Review phase or, if earlier, prior to entering the Assess/Pre-FEED phase of the project.

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PRODUCTION (U.K.) LIMITED AND BP EXPLORATION OPERATING  
COMPANY LIMITED**

**Work Programme (continued)**

**6 Site Characterisation Review**

- 6.1 By **31<sup>st</sup> May 2026** the Licensee shall submit to the OGA:
- (a) a Site Characterisation Review Report, which will include but not be limited to the Licensee's assessment as to whether its current database is sufficient and suitable to deliver subsurface characterisation of the proposed storage complexes and surrounding area(s) as set out in regulation 7 of the Regulations in a form and of a quality suitable for inclusion in an application for a carbon dioxide storage permit as set out in paragraph 9 of this Schedule, or if further data acquisition will be required;
  - (b) an updated version of the Early Risk Assessment Report referred to in paragraph 1 which shall demonstrate that an updated assessment of the uncertainties in defining the storage sites and storage complexes has been carried out and fully incorporate the outcomes of any new data acquired on or new information pertaining to the licence up to the date of such updated version of the Early Risk Assessment Report.

**7 End 'Assess' Phase Review**

- 7.1 By **31<sup>st</sup> May 2028** or, if earlier, prior to entering the 'Define' phase of the project, the Licensee shall undertake an End 'Assess' Phase Review, and shall submit to the OGA:
- (a) A report accompanying the End Assess Phase Review including but not limited to:
    - (i) That the storage site and storage complex characterisation is complete including identifying potential migration and leakage pathways relating to the proposed storage site and storage complex, identification of hazards and impacts;
    - (ii) A preliminary, qualitative risk assessment identifying proposed risk management measures, mitigating actions/monitoring requirements, safeguards or contingency measures; and
    - (iii) An outline concept-select assessment of the pipeline/transportation, facility and well options being considered, a forecast range of injection volumes during the operational term, and the associated carbon dioxide phase management engineering considerations. The timing of well abandonment and facility removal should be considered;



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COMPANY LIMITED**

**Work Programme (continued)**

- (b) A preliminary monitoring plan considering operational monitoring of injection facilities, baseline measurement and monitoring activities. Post-closure measurement and monitoring requirements should also be identified;
  - (i) A corrective measures feasibility study, identifying the range or potential measures that may be required to address any significant irregularities leakage identified by the monitoring plan;
  - (ii) A provisional closure and post closure assessment study to address the abandonment of the injection facilities, the post closure monitoring and how the requirements for allowing handover of the CS Licence to the appropriate Minister will be met; and
  - (iii) An activity plan and schedule for the Define/FEED phase.

**8 End 'Define' Phase Review**

- 8.1 No later than four (4) months prior to submission of an application for a Storage Permit to the OGA, the Licensee shall provide to the OGA an 'End Define Phase Review' of the Licensee's draft application for a storage permit demonstrating that the storage site(s) and storage complex(es) is/are integrated into a feasible project concept; including but not limited to a review of the storage site(s) and complex(es) development plan, including the carbon dioxide pipeline/transportation and injection facilities; containment risk assessment measures; monitoring plan; corrective measures plan ("CM"), and provisional closure and post-closure plan; and financial security.
- 8.2 No later than three (3) months prior to submission of the application for a Storage Permit to the OGA, the Licensee shall submit to the OGA End Define Phase draft documentation including:
  - (i) Storage site(s) and complex(es) development plan; including the carbon dioxide pipeline/transportation and injection facilities.
  - (ii) Containment risk assessment measures.
  - (iii) Monitoring Plan.
  - (iv) CM Plan.
  - (v) Provisional Closure and Post Closure Plan.
  - (vi) Proposed Financial Security.

**THIS IS SCHEDULE 4 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSAOR  
PRODUCTION (U.K.) LIMITED AND BP EXPLORATION OPERATING  
COMPANY LIMITED**

**Work Programme (continued)**

**9 Storage Permit Application**

- 9.1 By **28<sup>th</sup> February 2029** the Licensee shall make an application for a Storage Permit in accordance with clause 9 and the application requirements; provided such application shall be supported by:
- (a) a carbon storage development plan and such other necessary documents and other information as required by the application requirements in a form capable of the grant of permission by the OGA (if so minded) without further clarification, amendment or submission; and
  - (b) a letter from the board of directors of the Licensee confirming that funds have been committed to the development of the storage site; provided that where the Licensee is two or more persons, the reference to the Licensee is a reference to each of those persons.

**10 General**

- 10.1 In the event of failure to comply with any of the obligations set out above by the specified deadline, the OGA may, at any time after that specified deadline, by notice direct that the rights granted by the licence shall cease and determine.
- 10.2 Fulfilment of the obligations set out above is separate from and without prejudice to the requirements for the submission of an application for a Storage Permit which must be made in accordance with the legal and regulatory application requirements at the relevant time.



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CS023

**THIS IS SCHEDULE 5 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSOOR  
PRODUCTION (U.K.) LIMITED AND BP EXPLORATION OPERATING  
COMPANY LIMITED**

**Storage Permit**

**Execution Page**

IN WITNESS WHEREOF, these presents typewritten on this and the preceding pages are EXECUTED AS A DEED as follows: -

Signed for and on behalf of the Oil and Gas Authority by:

[Redacted] (full name)

(Director/Secretary/other authorised person – delete as appropriate)

on 04/09/2023 (date), at [Redacted] (town),

and either:

\_\_\_\_\_ (signature) \_\_\_\_\_ (full name)

(Director/other authorised person – delete as appropriate)

on \_\_\_\_\_ (date), at \_\_\_\_\_ (town),

or in the presence of this witness:

[Redacted] (full name)  
[Redacted] (address).

Signed\* for and on behalf of Chrysaor Production (U.K.) Limited by:

[Redacted] (full name)

(Director/Secretary/other authorised person – delete as appropriate)

on 30 AUGUST 2023 (date), at [Redacted] (town),

and either:

\_\_\_\_\_ (signature) \_\_\_\_\_ (full name)

(Director/other authorised person – delete as appropriate)

on \_\_\_\_\_ (date), at \_\_\_\_\_ (town),

or in the presence of this witness:

[Redacted] (full name)  
[Redacted] (address).



Signed\* for and on behalf of bp Exploration Operating Company Limited by:

[Redacted] name)

(Director/Secretary/other authorised person – delete as appropriate)

on 29/08/2023 (date), at [Redacted] (town),

and either:

\_\_\_\_\_ (signature) \_\_\_\_\_ (full name)

(Director/other authorised person – delete as appropriate)

on \_\_\_\_\_ (date), at \_\_\_\_\_ (town),

or in the presence of this witness:

[Redacted] full name)

of [Redacted] (address).

\*This deed must be executed by two authorised signatories (as defined in section 44(3) Companies Act 2006). They may be either two directors or a director and the company secretary. If only one authorised signatory signs, that person must be a director of the company and a second signatory must witness the director's signature.

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CARBON DIOXIDE APPRAISAL  
AND STORAGE LICENCE CS024

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**ENERGY ACT 2008**

**SECTION 18**

**CARBON DIOXIDE APPRAISAL AND STORAGE LICENCE**

**THE OIL AND GAS AUTHORITY**

**AND**

**CHRYSAOR PRODUCTION (U.K.) LIMITED**

**BP EXPLORATION OPERATING COMPANY LIMITED**

LICENCE

in respect of exploration of a controlled place with a view to selecting a site for  
the storage of carbon dioxide.



This licence, made 04 SEPTEMBER 2023  
 between the Oil and Gas Authority, of the one part and the company listed in  
 Part 1 of Schedule 1 of the other part witnesses as follows: -

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### Interpretation etc.

1.—(1) In this licence, the following expressions have the following meanings—

“the Act” means the Energy Act 2008;

“controlled place” has the meaning given to it in s.17(3), s.17(3A)(b) and s.17(4)(b) of the Act;

“Appraisal Term” means (subject to clause 6 (*Extension of Appraisal Term*) and clause 8 (*Termination of Licence*)) the period specified as such in Part 2 of Schedule 1;

“Half Year” means the period from 1st January to 30th June in any year and the period from 1st July to 31st December in any year;

“injection” means the injection of carbon dioxide streams into the storage site;

“Licensed Area” has the meaning given to it in clause 3;

“the Licensee” means the person (or all the persons) specified in Part 1 of Schedule 1 as licence holder (or joint licence holders);

“the OGA” means the Oil and Gas Authority;

“Operational Term” has the meaning given by clause 7(1) (*Operational Term and Post-Closure Period*);

“Storage Operator” means the single Licensee named as the operator in a Storage Permit;

“Petroleum” includes any mineral oil or relative hydrocarbon and natural gas existing in its natural condition in strata but does not include coal or bituminous shales or other stratified deposits from which oil can be extracted by destructive distillation;

“Post-Closure Period” has the meaning given by clause 7(2) (*Operational Term and Post-Closure Period*);

“the Regulations” means the Storage of Carbon Dioxide (Licensing etc.) Regulations 2010;<sup>1</sup>

“Start Date” means the date specified as such in Part 2 of Schedule 1;

“Storage Permit” means a permit granted in accordance with clause 9 (*Application for a storage permit*);

“the Termination Regulations” means the Storage of Carbon Dioxide (Termination of Licences) Regulations 2011;<sup>2</sup>

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<sup>1</sup> SI 2010/2221

<sup>2</sup> SI 2011/1483

“Work Programme” means the programme specified in Schedule 4.

“Well” includes borehole.

(2) Any reference in this licence to a numbered regulation is to that regulation of the Regulations.

(3) Any expression used in this licence which is defined in regulation 1 or in the Act and not otherwise defined in this clause has the meaning given by that regulation or by the Act.

(4) Any reference in this licence to a clause or Schedule is a reference to a clause of, or Schedule to, this licence; and any reference in a clause to a paragraph is to a paragraph of that clause.

(5) Any obligations which are to be observed and performed by the Licensee shall at any time at which the Licensee is more than one person be joint and several obligations.

### **Grant of licence**

**2.—**(1) In consideration of the performance by the Licensee of all the terms and conditions hereof, the OGA, in exercise of the powers conferred upon it by the Act, hereby grants to the Licensee exclusive licence during the continuance of this licence and subject to the provisions hereof—

- (a) to explore the Licensed Area in accordance with clause 5 (*Appraisal and storage activities*); and
- (b) if the Licensee is granted a Storage Permit in respect of a storage site within the Licensed Area, and subject to the terms and conditions of that permit, to store carbon dioxide in accordance with clause 5(2); and
- (c) to establish and maintain installations for these purposes.

### **Licensed Area**

**3.—**(1) The Licensed Area is the area for the time being in which the Licensee may exercise the rights granted by this licence and is, subject to paragraph (2), the area and, where applicable, the volume the co-ordinates and details of which are set out in Schedule 2.

(2) Where a storage permit is granted under this licence, on the grant of the storage permit the Licensed Area shall be as set out in clause 9.

### **Term of Licence**

**4.—**(1) This licence shall commence on the later of

- (a) the Start Date; and
- (b) the date on which this licence is granted.

(2) Unless sooner determined or revoked under any of its provisions, this licence shall continue—

- (a) for the Appraisal Term;
- (b) for the Operational Term; and
- (c) for the Post-Closure Period.



### **Appraisal and storage activities**

5.—(1) During the Appraisal Term, subject to the terms and conditions of this licence, the Licensee may, subject to the provisions of clause 12, carry on the following activities—

- (a) exploration (including test injection of carbon dioxide) within the Licensed Area with a view to, or in connection with, the carrying on of activities within section 17(2)(a) or (b) of the Act; and
- (b) the establishment or maintenance of installations for the purposes of such exploration.

(2) During the Operational Term and the Post-Closure Period, subject to the terms and conditions of this licence and of any Storage Permit granted under it, the Licensee may carry on the following activities—

- (a) storage of carbon dioxide (with a view to its permanent disposal) within section 17(2)(a) or (b) of the Act (including any ancillary monitoring);
- (b) exploration within the Licensed Area with a view to the carrying on of activities within section 17(2)(a) or (b) of the Act; and
- (c) the establishment or maintenance of installations for those purposes.

### **Extension of Appraisal Term**

6.—(1) At any time not later than three months before the expiry of the Appraisal Term, or such shorter notice period as the OGA may in its discretion permit, the Licensee may, subject to performance of the terms and conditions contained in this licence, give notice in writing to the OGA that it desires that term to be extended for a further period.

(2) Where notice is given in pursuance of paragraph (1) of this clause, the OGA may in its discretion direct in writing that the Appraisal Term be extended for a period and subject to such conditions as the OGA may determine, and paragraph (1) shall apply to the Appraisal Term as so extended.

(3) Where the Appraisal Term is extended under this clause, clause 4 (*Term of Licence*) shall apply in respect of that term as so extended.

### **Operational Term and Post-Closure Period**

7.—(1) The Operational Term shall be the period beginning with the date on which the Storage Permit is granted and ending with the closure of the storage site.

(2) The Post-Closure Period shall be the period beginning with the closure of the storage site, and continuing until this licence is terminated pursuant to the Termination Regulations.

### **Termination of Licence**

8.—(1) The Licensee may determine this licence or, with respect to clause 8(1)(a) only, surrender any part of the Licensed Area by giving to the OGA not less than one month's notice in writing to that effect—

- (a) before the expiry of the Appraisal Term; or
- (b) before the expiry of the Operational Term, but before the commencement of injection,

and such notice shall specify the date, no later than the expiry of the Appraisal Term or the commencement of injection as applicable, on which the determination or surrender (where applicable) shall take effect.

(2) Such determination or surrender (where applicable) shall be without prejudice to any obligation imposed upon, or liability incurred by, the Licensee under the terms and conditions of this licence.

### **Application for a storage permit**

**9.**—(1) An application for a storage permit may be made, in accordance with the Regulations, in respect of a storage site situated in the Licensed Area ('Storage Permit').

(2) If a Storage Permit is granted:

- (a) it shall be annexed as Schedule 5 to this licence;
- (b) subject to regulation 12, the conditions set out in Schedule 3 to this licence shall apply in respect of the storage site authorised under that Storage Permit; and
- (c) unless the OGA directs otherwise, with effect on and from the date of grant of the Storage Permit the Licensed Area shall be reduced such that the Licensed Area shall be the area, volume or both as applicable of the storage site, details of which shall be set out in Schedule 5, and Schedule 2 shall be amended accordingly, and this licence shall cease and determine in respect of any area or volume that no longer forms part of the Licensed Area but without prejudice to any obligation or liability imposed upon the Licensee or incurred by them under the terms of this licence prior to that date.

### **Provision of contact details to the OGA**

**10.**—(1) A notice, direction or other document authorised or required (in whatever terms) to be given to the Licensee by virtue of this licence is treated as given to the Licensee if it is given to the person specified by the Licensee under paragraph (2) at the address so specified.

(2) The Licensee must supply the OGA with the name and address of a person to whom notices, directions and other documents are to be given.

(3) The Licensee must ensure that, where there is a change in the person to whom, or the address to which, information should be sent in accordance with paragraph (2), the OGA is notified of the change as soon as is reasonably practicable.

(4) If the Licensee fails to comply with paragraph (2) the OGA may give the Licensee a notice which—

- (a) requires the Licensee to comply with paragraph (2) within the period of 30 days beginning with the date of the notice; and



- (b) states that, if the Licensee fails to do so, the Licensee will be treated as having supplied under paragraph (2) the name and address specified by the OGA in the notice.

### **Keeping of accounts**

11.—(1) The Licensee shall keep within the United Kingdom full and correct accounts in a form from time to time approved by the OGA of—

- (a) the quantity of the carbon dioxide stream injected into the Licensed Area;
- (b) the composition of the carbon dioxide stream injected into the Licensed Area;
- (c) the name and address of any person who has supplied the carbon dioxide stream to the Licensee, the quantity so supplied, and the place the carbon dioxide stream was conveyed from pursuant to the agreement for such supply; and
- (d) such other particulars as the OGA may from time to time require.

(2) The Licensee shall within two months after the end of each Half Year in which this licence is in force and within two months after the expiration or determination of this licence, subject to the Termination Regulations, deliver to the OGA an abstract in a form from time to time approved by the OGA of the accounts for that Half Year or for the period prior to such expiration or determination as the case may be.

### **Working obligations**

12.—(1) If a Work Programme is specified in Schedule 4, the Licensee shall before the expiry of the Appraisal Term carry out the Work Programme in accordance with the deadlines specified therein.

(2) If at any time the OGA serves a notice in writing on the Licensee requiring them to submit to the OGA, before a date specified in the notice, an appropriate programme for exploration with a view to selecting a site for carbon dioxide storage in the Licensed Area during a period so specified, the Licensee shall comply with the notice.

(3) For the purposes of paragraph (2), an appropriate programme is one which any person who, if that person—

- (a) were entitled to carry on the activities authorised by this licence;
- (b) had the competence and resources needed to carry on those activities to the best commercial advantage; and
- (c) were seeking to carry on those activities to the best commercial advantage,

could reasonably be expected to carry out during the period specified in the notice, and that period must be within the Appraisal Term.

(4) If a programme is submitted to the OGA in consequence of a notice served under paragraph (2), then—

- (a) the OGA shall not be entitled to revoke this licence on the ground that the programme does not satisfy the requirements of that paragraph (“the Relevant Requirements”); but
- (b) if the OGA is of the opinion that the programme does not satisfy the Relevant Requirements it may serve a notice in writing on the Licensee stating its opinion and the reasons for it.

(5) Where notice in respect of a programme is served on the Licensee under paragraph (4) the Licensee shall within a reasonable period beginning with the date of service of such notice submit to the OGA a further programme which satisfies the Relevant Requirements.

(6) The Licensee shall carry out any programme submitted by them under this clause in respect of which the OGA serves notice in writing on the Licensee stating that the OGA approves the programme and any programme approved by the OGA under this paragraph shall be deemed for the purposes of this licence to satisfy the Relevant Requirements.

(7) Where, in consequence of any breach or non-observance by the Licensee of any provision of paragraph (2), (5) or (6), the OGA has power by virtue of paragraph (1) of clause 33 (*Revocation of licence*) to revoke this licence, it may if it thinks fit exercise that power in relation to such part only of the Licensed Area as it may specify; and where it does so the rights granted by this licence shall cease in respect of the specified part of that area without prejudice to any obligation or liability imposed upon the Licensee or incurred by them under the terms of this licence.

(8) Where the Licensee has a duty by virtue of this clause to carry out a programme during a part of the Appraisal Term, the OGA may serve notice under paragraph (2) in respect of another such part.

### **Amendments to the Work Programme**

**13.**—(1) This clause applies if a Work Programme has been specified in Schedule 4.

(2) This clause applies to an amendment to be made to the content of the Work Programme (including to the deadline for taking an action).

(3) At any time not later than three months before the deadline for taking an action in the Work Programme the Licensee may give notice in writing to the OGA that the Licensee desires an amendment regarding that action, and the notice shall describe the proposed amendment.

(4) The OGA may in its discretion permit a shorter notice period than the period of three months specified in paragraph (3).

(5) Where notice is given, the OGA may in its discretion direct in writing that the Work Programme be amended as proposed.



**Relevant Works**

**14.**—(1) The Licensee shall not erect or carry out any Relevant Works in a controlled place, either in the Licensed Area or elsewhere, for the purposes of—

(a) the storage of carbon dioxide within section 17(2)(a) of the Act in the Licensed Area; or

(b) the conveyance of carbon dioxide for storage in the Licensed Area, except in accordance with the consent in writing of the OGA.

(2) The document in which that consent is given may be a storage permit.

(3) The document in which that consent is given may specify—

(a) any conditions to which the consent is subject; and

(b) a period to which the consent is limited.

(4) In this clause, “Relevant Works” means any structure and any other works (of any kind) which are intended by the Licensee to be permanent and are neither designed to be moved from place to place without major dismantling nor intended by the Licensee to be used only for exploring for places suitable for the storage of carbon dioxide.

**Commencement and abandonment and plugging of Wells, and test injection**

**15.**—(1) The Licensee shall not commence or recommence the drilling of any Well, or undertake the test injection of carbon dioxide, without the consent in writing of the OGA.

(2) Subject to paragraph (6), the Licensee shall not abandon any Well without the consent in writing of the OGA.

(3) The Licensee shall ensure compliance with any conditions subject to which any consent under either of the foregoing paragraphs is given.

(4) If any such condition under paragraph (1) relates to the position, depth or direction of the Well, or to any casing of the Well or if any condition under either paragraph (1) or paragraph (2) relates to any plugging or abandoning of the Well, the OGA may from time to time direct that the Well and all records relating thereto shall be examined in such manner, upon such occasions or at such intervals and by such person as may be specified by the OGA’s direction, and the Licensee shall pay to the OGA such fees and expenses for such examination as the OGA may specify.

(5) The plugging of any Well shall be done in accordance with a specification approved by the OGA applicable to that Well or to Wells generally or to a class of Wells to which that Well belongs and shall be carried out in an efficient and workmanlike manner.

(6) The OGA may at any time give the Licensee a notice requiring a Well drilled pursuant to this licence to be plugged and abandoned in accordance

with paragraph (5) within the period specified in the notice (but this paragraph is subject to paragraphs (8) and (9)).

(7) The Licensee shall comply with any notice under paragraph (6).

(8) A notice under paragraph (6) may not be given less than one month before the expiry or determination of the Licensee's rights under this licence in relation to the area, or the part of the area, in which the well is drilled.

(9) A notice under paragraph (6) may be given only in relation to a well which has not been used within the period of one year ending with the day on which the notice is given.

(10) Subject to paragraphs (6), (7), (11) and (12), any Well drilled by the Licensee pursuant to this licence shall be plugged and abandoned in accordance with paragraphs (2), (3), (4) and (5), not less than one month before the expiry or determination of the Licensee's rights in respect of the area or part thereof in which that Well is situated.

(11) A direction by the OGA may be given by notice in writing to the Licensee not less than one month before the Licensee's rights in respect of the area or part thereof in which the Well is situated expire or determine so as to relieve the Licensee of the obligation imposed by paragraph (10) of this clause to plug and abandon the Well.

(12) Where the OGA terminates or revokes this licence, any Well drilled pursuant to this licence shall—

- (a) be plugged and abandoned in accordance with paragraphs (2), (3), (4) and (5), as soon as reasonably practicable; or
- (b) if the OGA so directs when giving the notice of termination or revocation, be left in good order and fit for further working together with all casings and any Well head fixtures (where applicable) the removal whereof would cause damage to such Wells.

(13) Any Well that, pursuant to a direction by the OGA under paragraph (11), has not been plugged and abandoned, shall be left in good order and fit for further working together with all casings and any Well head fixtures (where applicable) the removal whereof would cause damage to such Wells.

(14) Unless the OGA directs otherwise, all casings and fixtures forming part of a Well and left in position at the expiry or determination (whether by termination, revocation or otherwise) of the Licensee's rights in respect of the area or part thereof in which that Well is drilled, or at the completion of any works required of the Licensee under paragraph (12) (whichever is the later), shall be the property of the OGA.

### **Control of Development Wells**

**16.—**(1) The Licensee shall not suspend work on the drilling of a Development Well, or having suspended it in accordance with this paragraph shall not begin it again except with the consent in writing of the OGA and in accordance with the conditions, if any, subject to which the consent is given.

(2) When work on the drilling of a Development Well is suspended in accordance with paragraph (1) of this clause, the Licensee shall forthwith



furnish the OGA with such information relating to the Well as the OGA may specify.

(3) The Licensee—

- (a) shall not do any Completion Work in respect of a Well in the Licensed Area except with the consent in writing of the OGA and in accordance with the conditions, if any, subject to which the consent is given;
- (b) shall furnish to the OGA, in accordance with the provisions of such a consent, particulars of any Completion Work done by the Licensee in respect of the Well; and
- (c) shall not remove or alter any casing or equipment installed by way of Completion Work in respect of a Well except with the consent in writing of the OGA and in accordance with the conditions, if any, subject to which the consent is given.

(4) In this clause—

“Completion Work”, in relation to a Well, means work, by way of the installation of a casing or equipment or otherwise after the Well has been drilled, for the purpose of bringing the Well into use as a Development Well; and

“Development Well” means a Well which the Licensee uses or intends to use in connection with the storage of carbon dioxide in the Licensed Area, other than a Well which for the time being he uses or intends to use only for activities pursuant to clause 5(1).

### **Distance of Wells within boundaries of Licensed Area**

17. No Well shall, except with the consent in writing of the OGA, be drilled or made so that any part thereof is less than one hundred and twenty-five metres from any of the boundaries of the Licensed Area.

### **Extraction of stored carbon dioxide**

18. The Licensee must not (and must not permit any other person to) extract stored carbon dioxide from the storage site except with the prior written consent of the OGA and in accordance with any conditions subject to which any such consent is given.

### **Avoidance of harmful methods of working**

19.—(1) The Licensee shall maintain all apparatus and appliances and all Wells in the Licensed Area which have not been abandoned and plugged as provided by clause 15 (*Commencement and abandonment and plugging of Wells, and test injection*) in good repair and condition and shall execute all operations in or in connection with the Licensed Area in a proper and workmanlike manner in accordance with methods and practice customarily used in good industry practice and in particular the Licensee shall take all steps practicable in order to prevent damage to adjoining strata. The Licensee shall give notice to the OGA of any event causing the escape or waste of Petroleum or the escape of carbon dioxide from the carbon dioxide stream or

damage to any petroleum-bearing strata or any carbon dioxide storage site forthwith after the occurrence of that event.

(2) The Licensee shall comply with any instructions from time to time given by the OGA in writing relating to any of the matters set out in the foregoing paragraph.

(3) In this clause, “good industry practice” means the exercise of that degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled and experienced operator engaged in an activity consented to or authorised by or under this licence.

### **Appointment of exploration operators**

**20.**—(1) The Licensee shall ensure that another person (including, in the case where the Licensee is two or more persons, any of those persons) does not exercise any function of organising or supervising any activity described in clause 5(1) (*Appraisal and storage activities*) in pursuance of this licence unless that other person is a person approved in writing by the OGA and the function in question is one to which that approval relates.

(2) The OGA shall not refuse to give its approval of a person in pursuance of paragraph (1) if that person is competent to exercise the function in question, but where an approved person is no longer competent to exercise that function the OGA may, by notice in writing given to the Licensee, revoke its approval.

### **Fishing and navigation**

**21.** The Licensee shall not carry out any operations in or about the Licensed Area in such manner as to interfere unjustifiably with navigation or fishing in the waters of the Licensed Area or with the conservation of the living resources of the sea.

### **Training**

**22.**—(1) The OGA may from time to time (after consulting the Licensee) give to the Licensee instructions in writing as to the training of persons employed or to be employed, whether by the Licensee or by any other person, in any activity which is related to the exercise of the rights granted by this licence, and the Licensee shall ensure that any instructions so given are complied with.

(2) The Licensee shall furnish the OGA with such information relating to the training of persons referred to in paragraph (1) of this clause as the OGA may from time to time request.

### **Licensee to keep records**

**23.**—(1) The Licensee shall keep accurate records in a form from time to time approved by the OGA of the drilling, deepening, plugging or abandonment of all Wells and of any alterations in the casing thereof. Such records shall contain particulars of the following matters—



- (a) the site of and number assigned to every Well;
- (b) the subsoil and strata through which the Well was drilled;
- (c) the casing inserted in any Well and any alteration to such casing;
- (d) any Petroleum, water, mines or workable seams of coal encountered in the course of such activities; and
- (e) such other matters as the OGA may from time to time direct.

(2) The Licensee shall keep within the United Kingdom accurate geological plans and maps relating to the Licensed Area and such other records in relation thereto as may be necessary to preserve all information which the Licensee has about the geology of the Licensed Area.

(3) The Licensee shall deliver copies of the said records, plans and maps referred to in the two foregoing paragraphs to the OGA when requested to do so either—

- (a) within any time limit specified in the request; or
- (b) if there is no time limit specified, within four weeks of the request.

### Returns

**24.**—(1) The Licensee shall furnish the OGA with such information and in such manner as the OGA may from time to time request about any of the activities authorised by this licence.

(2) The Licensee shall comply with any such request either—

- (a) within any time limit specified in the request; or
- (b) if there is no time limit specified, within four weeks of the request.

### Licensee to keep samples

**25.**—(1) As far as reasonably practicable the Licensee shall correctly label and preserve for reference for a period of five years samples of the sea bed and of the strata encountered in any Well and samples of any Petroleum or water discovered in any Well in the Licensed Area.

(2) The Licensee shall not dispose of any sample after the expiry of the said period of five years unless—

- (a) the Licensee has at least six months before the date of the disposal given notice in writing to the OGA of its intention to dispose of the same; and
- (b) the OGA or any person authorised by it has not within the said period of six months informed the Licensee in writing that it wishes the sample to be delivered to it.

(3) The OGA or any person authorised by it shall be entitled at any time—

- (a) to inform the Licensee in writing that it wishes the whole or any part of any sample preserved by the Licensee to be delivered to the OGA; or
- (b) to inspect and analyse any sample preserved by the Licensee.

(4) The Licensee shall forthwith comply with any request for the delivery of the whole or any part of any sample which is made in accordance with the preceding provisions of this clause.

**Reports to be treated as confidential**

**26.**—(1) All records, returns, plans, maps, samples, accounts and information (in this clause referred to as “the specified data”) which the Licensee is or may from time to time be required to furnish under the provisions of this licence shall be supplied at the expense of the Licensee and shall not (except with the consent in writing of the Licensee which shall not be unreasonably withheld) be disclosed to any person not in the service or employment of the OGA or the Crown—

Provided that—

- (a) the OGA shall be entitled at any time to make use of any of the specified data for the purpose of preparing and publishing such returns and reports as may be required of the OGA by law;
- (b) the OGA shall be entitled at any time to furnish any of the specified data to the Natural Environment Research Council and to any other body of a like nature as may from time to time be carrying on activities of a substantially similar kind to the geological activities at present carried on by the said Council;
- (c) the OGA, the said Council and any such other body shall be entitled at any time to prepare and publish reports and surveys of a general nature using information derived from any of the specified data;
- (d) the OGA, the said Council and any other such body shall be entitled to publish any of the specified data of a geological, scientific or technical kind either—
  - (a) after the expiration of the period of three years beginning with the date when the data were due to be supplied to the OGA in accordance with clause 23 (*Licensee to keep records*) or 24 (*Returns*), or if earlier, the date when the OGA received those data;
  - (b) after the licence ceases to have effect, whether because of its determination, revocation or termination pursuant to the Termination Regulations; or
  - (c) after the expiration of such longer period as the OGA may determine after considering any representations made to it by the Licensee about the publication of data in pursuance of this sub-paragraph.

(2) This clause shall not prevent the publication by the OGA of the results of any monitoring required by any Storage Permit granted pursuant to this licence.



**Inspection of records etc.**

27. The Licensee shall—

- (a) permit any person who is appointed by the OGA for the purpose to inspect, and to take copies of and make notes from, all books, papers, maps and other records of any kind kept by the Licensee in pursuance of this licence or in connection with activities about which the OGA is entitled to obtain information in pursuance of clauses 22(2) (*Training*) and 24 (*Returns*) of this licence; and
- (b) furnish that person at reasonable times with such information and provide them at reasonable times with such reasonable assistance as that person may request in connection with or arising out of an inspection in pursuance of this clause.

**Rights of access**

28. Without prejudice to the OGA's rights under the Regulations and the Act, any person or persons authorised by the OGA shall be entitled at all reasonable times to enter into and upon any of the Licensee's installations or equipment used or to be used in connection with the activities authorised by this licence—

- (a) to examine the installations, Wells, plant, appliances and works made or executed by the Licensee in pursuance of the licence and the state of repair and condition thereof; and
- (b) to execute any works, to carry out any monitoring or to provide and install any equipment which the OGA may be entitled to execute, carry out or provide and install in accordance with the provisions of this licence or in the execution of any powers under the Regulations or the Act.

**Power to execute works**

29. Without prejudice to the OGA's rights under the Regulations and the Act, if the Licensee shall at any time fail to perform the obligations arising under the terms and conditions of either of clauses 15 (*Commencement and abandonment and plugging of Wells, and test injection*) or 19 (*Avoidance of harmful methods of working*), the OGA shall be entitled, after giving to the Licensee reasonable notice in writing of its intention, to execute any works and to provide and install any equipment which in the opinion of the OGA may be necessary to secure the performance of the said obligations or any of them and to recover the costs and expenses of so doing from the Licensee.

**Transfer of licence etc.**

30. The Licensee shall not, except with the consent in writing of the OGA and in accordance with the conditions (if any) of the consent, do anything whatsoever whereby, under the law (including the rules of equity) of any part of the European Union or of any other place, any right granted by this Licence or derived from a right so granted becomes exercisable by or for the benefit of or in accordance with the directions of another person.

**Change in control of Licensee**

- 31.**— (1) This clause applies if—
- (a) the Licensee is a company, or
  - (b) where two or more persons are the Licensee, any of those persons is a company,
- and references in this clause to a company are to such a company.
- (2) A change in control of a company is not permitted without the consent of the OGA.
- (3) There is a “change in control” of a company if a person takes control of the company, not having previously been a person who controlled the company.
- (4) If a change in control of a company is contemplated, the company must apply in writing to the OGA for consent at least three months before the date on which it is proposed that the change would occur (if consent were given).
- (5) The OGA may—
- (a) consent to the change in control unconditionally,
  - (b) consent to the change in control subject to conditions, or
  - (c) refuse consent to the change in control.
- (6) If the OGA proposes to grant consent subject to any condition or to refuse consent, the OGA must, before making a final decision—
- (a) give the company an opportunity to make representations, and
  - (b) consider any representations that are made.
- (7) The OGA will normally aim to make its decision on an application within three months of receiving it, but the OGA may delay its decision by notifying the interested parties in writing.
- (8) Conditions as mentioned in paragraph (5)(b) may be imposed on the person taking control of the company (as well as on the company), and may include—
- (a) conditions relating to the arrangements for the change in control, including the date by which it must occur,
  - (b) conditions relating to the performance of activities permitted by this licence, and
  - (c) financial conditions.
- (9) The OGA’s decision on the application, and any conditions as mentioned in paragraph (5)(b), must be notified in writing to the interested parties.
- (10) In this clause “the interested parties” means—
- (a) the company,
  - (b) the person who (if consent were granted) would take control of the company, and



- (c) if the company and another person or persons are the Licensee, that other person or those other persons.

(11) For the purposes of this clause, “control” of a company is to be construed in accordance with sections 450(2) to (4) and 451(1) to (5) of the Corporation Tax Act 2010, modified as specified in clause 31(12).

(12) The modifications of sections 450(2) to (4) and 451(1) to (5) of the Corporation Tax Act 2010 referred to in paragraph (11) are—

- (a) for the words “the greater part” wherever they occur in section 450(3), there shall be substituted the words “one-third or more”;
- (b) in section 451(4) and (5), for the word “may”, there shall be substituted the word “must”; and
- (c) in section 451(4) and (5) any reference to an associate of a person shall be construed as including only—
  - i. a relative (as defined in section 448(2) of that Act) of the person;
  - ii. a partner of the person; and
  - iii. a trustee of a settlement (as defined in section 620 of the Income Tax (Trading and Other Income) Act 2005) of which the person is a beneficiary.

**OGA’s power to require information about change in control of licence holder**

**31A.**—(1) The OGA may by notice in writing require a person within paragraph (2) to provide the OGA with any information that it requires for the purpose of exercising its functions in relation to a change or potential change in control of a licence holder which is a company.

(2) The persons within this paragraph are—

- (a) the company;
- (b) the person who (if consent were granted) would take control of the company;
- (c) if the company is a joint licence holder with another person or other persons, that other person or those other persons;
- (d) any person not within any of paragraphs (a) to (c) who appears to the OGA to have information that it requires as mentioned in paragraph (1).

(3) The power conferred by this section does not include power to require the provision of any information that would be protected from disclosure or production in legal proceedings on grounds of legal professional privilege or, in Scotland, confidentiality of communications.

### Indemnity against third party claims

**32.** The Licensee shall at all times keep the OGA effectually indemnified against all actions, proceedings, costs, charges, claims and demands whatsoever which may be made or brought against the OGA by any third party in relation to or in connection with this licence or any matter or thing done or purported to be done in pursuance thereof.

### Revocation of licence

**33.—**(1) Without prejudice to the rights of the OGA under the Regulations and the Act, if any of the events specified in paragraph (3) occurs then the OGA may (by giving the Licensee notice in writing to that effect) revoke this licence with effect from the date specified in the notice.

(2) If the OGA exercises the power in paragraph (1), the rights granted to the Licensee by this licence shall cease and determine; but subject nevertheless and without prejudice to any obligation imposed upon, or liability incurred by, the Licensee under the terms and conditions of this licence.

(3) The events specified by this paragraph are—

- (a) any breach or non-observance by the Licensee of any of the terms and conditions of this licence;
- (b) in Great Britain, the bankruptcy or sequestration of the Licensee;
- (c) in Great Britain, the making by the Licensee of any arrangement or composition with its creditors;
- (d) in Great Britain, if the Licensee is a company, the appointment of a receiver or administrator or any liquidation whether compulsory or voluntary;
- (e) in a jurisdiction other than Great Britain, the commencement of any procedure or the making of any arrangement or appointment substantially corresponding to any of those mentioned in sub-paragraphs (b) to (d) of this paragraph.
- (f) where a statement has been made by the Licensee which is known to be false in a material particular, or recklessly makes a statement which is false in a material particular, for the purpose of inducing the OGA –
  - (a) to grant this licence;
  - (b) to grant a consent under this licence; or
  - (c) to grant an approval under this licence,

and where two or more persons are the Licensee any reference to the Licensee in sub-paragraphs (b) to (f) of this paragraph is a reference to any of those persons.



**Revocation of licence re change in control**

**34.**—(1) This clause applies in connection with a change in control of a licence holder which is a company (see clause 31).

(2) In the event of—

- (a) any breach or non-observance by the company of the terms of clause 31,
- (b) any breach of a condition (imposed in accordance with clause 31) subject to which the OGA gave its consent to a change of control of the company, or
- (c) any failure to provide full and accurate information in response to a notice given by the OGA pursuant to clause 31A

the OGA may, giving the company and any joint licence holders notice in writing, revoke the licence with effect from the date specified in the notice.

**Power of partial revocation**

**35.**—(1) This clause applies where two or more persons are the Licensee and an event mentioned in clause 33(3)(b), (c), (d), (e) or (f) occurs in relation to one of those persons.

(2) Where this clause applies, the OGA may exercise the power of revocation in clause 33 to revoke the licence in so far as it applies to the person mentioned in paragraph (1).

(3) If the OGA exercises the power in paragraph (2), the rights granted to the person under this licence cease, but without prejudice to any obligation imposed upon, or liability incurred by, the person under the terms and conditions of this licence.

(4) Where this licence is revoked in relation to one person under this clause, it continues to have effect in respect of the other person who constitutes, or persons who together constitute, the Licensee and in relation to whom it is not revoked.

**Partial revocation of licence re change in control**

**36.**—(1) This clause applies where two or more persons are joint licence holders and any of them is a company.

(2) If any event mentioned in clause 34(2)(a), (b) or (c) occurs in connection with a change in control of the company, the OGA may exercise the power in clause 34 to revoke the licence in so far as it applies to that company.

(3) Where this licence is revoked in relation to one person under this clause, it continues to have effect in respect of the other person who constitutes, or persons who together constitute, the Licensee and in relation to whom it is not revoked.

**Ministry of Defence**

**37.**—(1) The Licensee shall give the Ministry of Defence six months' prior notice of any installation movements within the Licensed Area.

(2) The Licensee shall give the Ministry of Defence six weeks' prior notice of any seismic survey within the Licensed Area.

(3) The Licensee shall, at the Licensee's own expense, install and maintain underwater sonar beacons to Ministry of Defence specifications on any structures that may be temporarily within the Licensed Area provided that there shall be no requirement to fit such beacons to fixed and charted installations.

### **Relationship with fishing industry**

**38.**—(1) The Licensee shall appoint a fisheries liaison officer who shall agree suitable arrangements with the seismic survey and supply vessel owners employed by the Licensee, their masters and the organisations or individuals which represent the local fishing industry in order to promote good working relationships between the various parties. The setting up of the arrangements shall be the responsibility of the Licensee. In particular the Licensee shall—

- (a) consult the organisations which represent the local fishing industry about the sea routes to be used by supply vessels;
- (b) after informing the OGA of the result of such consultations, agree with the OGA which routes shall be used to minimise interference with fishing activities without thereby unreasonably increasing transit times;
- (c) ensure that the agreed routes are used unless safety of navigation or security of cargo considerations dictate otherwise; and
- (d) take all reasonable steps to ensure that a responsible person who is fluent in English is a member of the crew of the supply vessel.

(2) The Licensee shall make every effort to locate and remove, without unreasonable delay, any debris resulting from the licensed activities. The Licensee shall consult the relevant fishing organisations on the method of clearance and inform the OGA of the result of such consultation. If as a result of such consultation the OGA determines that the method of clearance of debris should be modified, such modifications shall be observed by the Licensee.

(3) Claims for damage to or loss of gear or loss of fishing time arising from reported debris shall be dealt with promptly by the Licensee.

### **Relationship with other users**

**39.** Without prejudice to clause 37 (*Ministry of Defence*) and clause 38 (*Relationship with fishing industry*), when planning any activity or operation under this licence, the Licensee shall take into consideration any activities being undertaken, or likely to be undertaken, in the licensed area or that impact, or are likely to impact, such licence activities or operations.



### Discovery of Petroleum

**40.**—(1) This paragraph applies where the Licensee—

- (a) becomes aware, whether by means of a geological survey or otherwise, of the presence of any amount of Petroleum at a place within the Licensed Area;
- (b) is not the holder of a Petroleum Licence entitling the holder to search and bore for and get Petroleum in and from that place; and
- (c) has not entered into any agreement with the holder of such a Petroleum Licence, and in accordance with its provisions, entitling the Licensee to the Petroleum got from that place.

(2) When paragraph (1) applies the Licensee shall, as soon as is reasonably practicable—

- (a) notify the OGA of such presence of Petroleum in writing; and
- (b) comply with any directions given by the OGA.

(3) For the purposes of paragraph (1), “Petroleum Licence” means a licence under section 3 of the Petroleum Act 1998 or section 2 of the Petroleum (Production) Act 1934.

### Arbitration

**41.**—(1) If at any time any dispute, difference or question shall arise between the OGA and the Licensee as to any matter arising under or by virtue of this licence or as to their respective rights and liabilities in respect thereof then the same shall, except where it is expressly provided by this licence that the matter or thing to which the same relates is to be determined, decided, directed, approved or consented to by the OGA, be referred to arbitration as provided by the following paragraphs.

- (a) The arbitration referred to in the foregoing paragraph shall be by a single arbitrator who, in default of agreement between the OGA and the Licensee as to its appointment, shall be appointed by the Lord Chief Justice of England for the time being.

(2) This clause does not affect the power of the OGA to institute (or authorise the institution) of criminal proceedings, to apply for an injunction, or to give any direction or notice, under any provision contained in Chapter 3 of Part 1 of the Act.

(3) This clause does not apply to any matter arising under the provisions of the Storage Permit.

### Counterpart Execution

**42.** This licence may be executed in any number of counterparts with the same effect as if the signatures on the counterparts were a single engrossment thereof PROVIDED THAT this licence shall not be completed until each party has signed a counterpart.

**THIS IS SCHEDULE 1 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSAOR  
PRODUCTION (U.K.) LIMITED AND BP EXPLORATION OPERATING  
COMPANY LIMITED**

PART 1

**Companies**

Chrysaor Production (U.K.) Limited, with registered address of 23 Lower Belgrave Street, London, England, SW1W 0NR (registered number 00524868).

bp Exploration Operating Company Limited, with registered address of Chertsey Road, Sunbury On Thames, Middlesex, TW16 7BP (registered number 00305943).

PART 2

The **Start Date** is 1 September 2023.

The **Appraisal Term** is the period 6 years beginning at the Start Date.



**THIS IS SCHEDULE 2 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSAOR  
PRODUCTION (U.K.) LIMITED AND BP EXPLORATION OPERATING  
COMPANY LIMITED**

**Licensed Area**

A polygon, the boundary of which is defined by parallels of Latitude and Meridians joining the following points, as defined on European Datum First Adjustment 1950 (ED50):

- |     |               |                |
|-----|---------------|----------------|
| 1)  | 53° 37' 00" N | 002° 03' 00" E |
| 2)  | 53° 35' 00" N | 002° 03' 00" E |
| 3)  | 53° 35' 00" N | 002° 07' 00" E |
| 4)  | 53° 29' 00" N | 002° 07' 00" E |
| 5)  | 53° 29' 00" N | 001° 58' 00" E |
| 6)  | 53° 31' 00" N | 001° 58' 00" E |
| 7)  | 53° 31' 00" N | 001° 56' 00" E |
| 8)  | 53° 32' 00" N | 001° 56' 00" E |
| 9)  | 53° 32' 00" N | 001° 53' 00" E |
| 10) | 53° 35' 00" N | 001° 53' 00" E |
| 11) | 53° 35' 00" N | 001° 52' 00" E |
| 12) | 53° 37' 00" N | 001° 52' 00" E |
| 13) | 53° 37' 00" N | 002° 03' 00" E |

The lines joining coordinates (1) to (13) are navigated by loxodromes.

**THIS IS SCHEDULE 3 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSAOR  
PRODUCTION (U.K.) LIMITED AND BP EXPLORATION OPERATING  
COMPANY LIMITED**

**General Conditions applicable to a storage site authorised under a  
Storage Permit granted under this licence**

**Closure of storage site by the operator**

- 1.—(1) The Storage Operator must close the storage site where the conditions for closure set out in the Storage Permit are met.
- (2) The Storage Operator may close the storage site if—
- (a) the consent in writing of the OGA has been given following an application under sub-paragraph (3), and
  - (b) any conditions attached to that consent have been met.
- (3) An application for the OGA's consent to the closure of the storage site must—
- (a) be made in writing and sent to the OGA, and
  - (b) contain the reasons why the Storage Operator proposes to close the storage site.
- (4) However, a storage site may not be closed under sub-paragraph (1) or (2) until the terms of the post-closure plan for the storage site have been determined under regulation 13(3) of the Regulations.

**Post-closure plan**

- 2.—(1) Prior to the closure of the storage site in accordance with paragraph (1) or (2), the Storage Operator must submit a proposed post-closure plan to the OGA for approval.
- (2) That proposal must be based on the provisional post-closure plan, subject to any modifications proposed by the Storage Operator.
- (3) In deciding whether to propose any such modifications, the Storage Operator must take into account—
- (a) an analysis of the relevant risks;
  - (b) current best practice; and
  - (c) any improvements in the available technology.

**Post-closure obligations**

- 3.—(1) After the storage site has been closed and until the licence is terminated, the Storage Operator must continue to—
- (a) monitor the storage site in accordance with the conditions of the Storage Permit relating to monitoring, including the monitoring plan,



**THIS IS SCHEDULE 3 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSOOR  
PRODUCTION (U.K.) LIMITED AND BP EXPLORATION OPERATING  
COMPANY LIMITED**

**General Conditions applicable to a storage site authorised under a  
Storage Permit granted under this licence (continued)**

- (b) comply with its reporting and notification obligations in accordance with the conditions of the Storage Permit relating to reporting and notification of leakages and significant irregularities, (with the exception of the requirement to report on the quantities, properties and composition of the carbon dioxide stream registered by the Storage Operator), and
  - (c) comply with its obligations to take corrective measures in accordance with the conditions of the Storage Permit relating to corrective measures.
- (2) However, for those purposes any reference to the monitoring plan or the corrective measures plan is to be read as a reference to the post-closure plan.
- (3) The Storage Operator must seal the storage site and remove the injection facilities in accordance with its obligations under Part 4 of the Petroleum Act 1998.

**THIS IS SCHEDULE 4 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSAOR  
PRODUCTION (U.K.) LIMITED AND BP EXPLORATION OPERATING  
COMPANY LIMITED**

**Work Programme**

**1 Early Risk Assessment**

1.1 The Licensee shall:

- (a) by **29<sup>th</sup> February 2024** (unless the OGA agrees otherwise) submit an Early Risk Assessment Report in writing to the OGA;
- (b) within one (1) month after submitting that Report, convene a Risk Assessment Workshop at a mutually suitable date/time/venue with the OGA and relevant external technical experts as agreed with the OGA; and
- (c) within one (1) month from the Risk Assessment Workshop demonstrate to the OGA's satisfaction that any further risk reduction measures agreed following the Risk Assessment Workshop have been added to the Licensee's approved work plan.

1.2 The Early Risk Assessment Report will include at a minimum:

- (a) an analysis of potential threats to capacity for, and injectivity and containment of, carbon dioxide;
- (b) assessment of the uncertainties in defining the storage sites and storage complexes including injectivity and capacity; and
- (c) identification of any further studies, data gathering and/or appraisal required to address any risk or uncertainties.

**2 Proprietary Seismic Reprocessing**

2.1 The Licensee shall:

- (a) By **31<sup>st</sup> August 2025** obtain, reprocess and interpret a minimum of 550 sq kms fully migrated, proprietary 3D seismic data providing full coverage of and optimised to support site characterisation of the Rotliegend candidate storage site, complex and overburden, and provide the relevant data to the OGA if requested; and;
- (b) By **31<sup>st</sup> August 2025** provide for public release via the National Data Repository the reprocessed data generated as part of the seismic reprocessing under paragraph 2.1(a) above.



**THIS IS SCHEDULE 4 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSAOR  
PRODUCTION (U.K.) LIMITED AND BP EXPLORATION OPERATING  
COMPANY LIMITED**

**Work Programme (continued)**

**3 Firm Studies**

3.1 The Licensee shall:

- (a) by **31<sup>st</sup> August 2024** complete a geomechanical study on the Audrey field to understand the effects of depletion and recharge on the Rotliegend storage interval;
- (b) by **31<sup>st</sup> August 2025** complete fault seal studies to address uncertainty related to compartmentalisation, fault reactivation and fault stability; and
- (c) by **28<sup>th</sup> February 2026** perform multi-stage core analysis to address uncertainties as they relate to the conformance of CO<sub>2</sub> within the storage sites.

And in the case of each of paragraphs 3.1(a) to (c), the Licensee will provide the raw data from these analyses for public release via the National Data Repository.

**4 Contingent Studies**

- 4.1 The Licensee shall by **30<sup>th</sup> November 2026** perform Special Core Analysis (SCAL) using proprietary Digital Rock technology provided that the Licensee shall not be required to do so if the OGA confirms in writing that the Licensee has demonstrated to the OGA's satisfaction, on the basis of analysis and other work presented, that the acquisition of further data is not a good (technical or economic) mitigation for the uncertainty of CO<sub>2</sub> containment.
- 4.2 Unless the proviso in paragraph 4.1 applies and the OGA agrees that the relevant studies are not required to be carried out, the Licensee shall release the raw data from the Digital Rocks study to the public via the National Data Repository.

**5 Assess/Pre-FEED Plan**

- 5.1 The Licensee shall submit to the OGA an Assess/Pre-FEED phase activity plan and schedule for the Audrey store and any other stores as are due to be included in the Site Characterisation Review Report set out in paragraph 6, three (3) months prior to entering the Site Characterisation Review phase or, if earlier, prior to entering the Assess/Pre-FEED phase of the project.

**THIS IS SCHEDULE 4 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSAOR  
PRODUCTION (U.K.) LIMITED AND BP EXPLORATION OPERATING  
COMPANY LIMITED**

**Work Programme (continued)**

**6 Site Characterisation Review**

- 6.1 By **31<sup>st</sup> May 2026** the Licensee shall submit to the OGA:
- (a) a Site Characterisation Review Report, which will include but not be limited to the Licensee's assessment as to whether its current database is sufficient and suitable to deliver subsurface characterisation of the proposed storage complexes and surrounding area(s) as set out in regulation 7 of the Regulations in a form and of a quality suitable for inclusion in an application for a carbon dioxide storage permit as set out in paragraph 9 of this Schedule, or if further data acquisition will be required;
  - (b) An updated version of the Early Risk Assessment Report referred to in paragraph 1 which shall demonstrate that an updated assessment of the uncertainties in defining the storage sites and storage complexes has been carried out and fully incorporate the outcomes of any new data acquired on or new information pertaining to the licence up to the date of such updated version of the Early Risk Assessment Report.

**7 End 'Assess' Phase Review**

- 7.1 By **31<sup>st</sup> May 2028** or, if earlier, prior to entering the 'Define' phase of the project, the Licensee shall undertake an End 'Assess' Phase Review, and shall submit to the OGA:
- (a) A report accompanying the End Assess Phase Review including but not limited to:
    - (i) That the storage site and storage complex characterisation is complete including identifying potential migration and leakage pathways relating to the proposed storage site and storage complex, identification of hazards and impacts;
    - (ii) A preliminary, qualitative risk assessment identifying proposed risk management measures, mitigating actions/monitoring requirements, safeguards or contingency measures; and
    - (iii) An outline concept-select assessment of the pipeline/transportation, facility and well options being considered, a forecast range of injection volumes during the operational term, and the associated carbon dioxide phase management engineering considerations. The timing of well abandonment and facility removal should be considered;



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COMPANY LIMITED**

**Work Programme (continued)**

- (b) A preliminary monitoring plan considering operational monitoring of injection facilities, baseline measurement and monitoring activities. Post-closure measurement and monitoring requirements should also be identified;
- (i) A corrective measures feasibility study, identifying the range or potential measures that may be required to address any significant irregularities leakage identified by the monitoring plan;
  - (ii) A provisional closure and post closure assessment study to address the abandonment of the injection facilities, the post closure monitoring and how the requirements for allowing handover of the CS Licence to the appropriate Minister will be met; and
  - (iii) An activity plan and schedule for the Define/FEED phase.

**8 End 'Define' Phase Review**

- 8.1 No later than four (4) months prior to submission of an application for a Storage Permit to the OGA, the Licensee shall provide to the OGA an 'End Define Phase Review' of the Licensee's draft application for a storage permit demonstrating that the storage site(s) and storage complex(es) is/are integrated into a feasible project concept; including but not limited to a review of the storage site(s) and complex(es) development plan, including the carbon dioxide pipeline/transportation and injection facilities; containment risk assessment measures; monitoring plan; corrective measures plan ("CM"), and provisional closure and post-closure plan; and financial security.
- 8.2 No later than three (3) months prior to submission of the application for a Storage Permit to the OGA, the Licensee shall submit to the OGA End Define Phase draft documentation including:
- (i) Storage site(s) and complex(es) development plan; including the carbon dioxide pipeline/transportation and injection facilities.
  - (ii) Containment risk assessment measures.
  - (iii) Monitoring Plan.
  - (iv) CM Plan.
  - (v) Provisional Closure and Post Closure Plan.
  - (vi) Proposed Financial Security.

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BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSAOR  
PRODUCTION (U.K.) LIMITED AND BP EXPLORATION OPERATING  
COMPANY LIMITED**

**Work Programme (continued)**

**9 Storage Permit Application**

- 9.1 By **28<sup>th</sup> February 2029** the Licensee shall make an application for a Storage Permit in accordance with clause 9 and the application requirements; provided such application shall be supported by:
- (a) A carbon storage development plan and such other necessary documents and other information as required by the application requirements in a form capable of the grant of permission by the OGA (if so minded) without further clarification, amendment or submission; and
  - (b) A letter from the board of directors of the Licensee confirming that funds have been committed to the development of the storage site; provided that where the Licensee is two or more persons, the reference to the Licensee is a reference to each of those persons.

**10 General**

- 10.1 In the event of failure to comply with any of the obligations set out above by the specified deadline, the OGA may, at any time after that specified deadline, by notice direct that the rights granted by the licence shall cease and determine.
- 10.2 Fulfilment of the obligations set out above is separate from and without prejudice to the requirements for the submission of an application for a Storage Permit which must be made in accordance with the legal and regulatory application requirements at the relevant time.



Ⓔ

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**THIS IS SCHEDULE 5 REFERRED TO IN THE FOREGOING LICENCE  
BETWEEN THE OIL AND GAS AUTHORITY AND CHRYSOOR  
PRODUCTION (U.K.) LIMITED AND BP EXPLORATION OPERATING  
COMPANY LIMITED**

**Storage Permit**

**Execution Page**

IN WITNESS WHEREOF, these presents typewritten on this and the preceding pages are EXECUTED AS A DEED as follows: -

**Signed for and on behalf of the Oil and Gas Authority by:**

[Redacted] (full name)  
(Director/Secretary/other authorised person – delete as appropriate)

on 04/09/2023 (date), at [Redacted] (town),

and either:

\_\_\_\_\_ (signature) \_\_\_\_\_ (full name)  
(Director/other authorised person – delete as appropriate)

on \_\_\_\_\_ (date), at \_\_\_\_\_ (town),

or in the presence of this witness:

[Redacted] (full name)  
[Redacted] (address).

**Signed\* for and on behalf of Chrysaor Production (U.K.) Limited by:**

[Redacted] (full name)  
(Director/Secretary/other authorised person – delete as appropriate)

on 30 AUGUST 2023 (date), at [Redacted] (town),

and either:

\_\_\_\_\_ (signature) \_\_\_\_\_ (full name)  
(Director/other authorised person – delete as appropriate)

[Redacted] (date), at [Redacted] (town),  
[Redacted] (name)  
[Redacted] (address).



Signed\* for and on behalf of bp Exploration Operating Company Limited by:

[Redacted] (full name)  
(Director/Secretary/other authorised person – delete as appropriate)

on 29/08/2023 (date), at [Redacted] (town),

and either:

\_\_\_\_\_ (signature) \_\_\_\_\_ (full name)  
(Director/other authorised person – delete as appropriate)

on \_\_\_\_\_ (date), at \_\_\_\_\_ (town),

or in the presence of this witness:

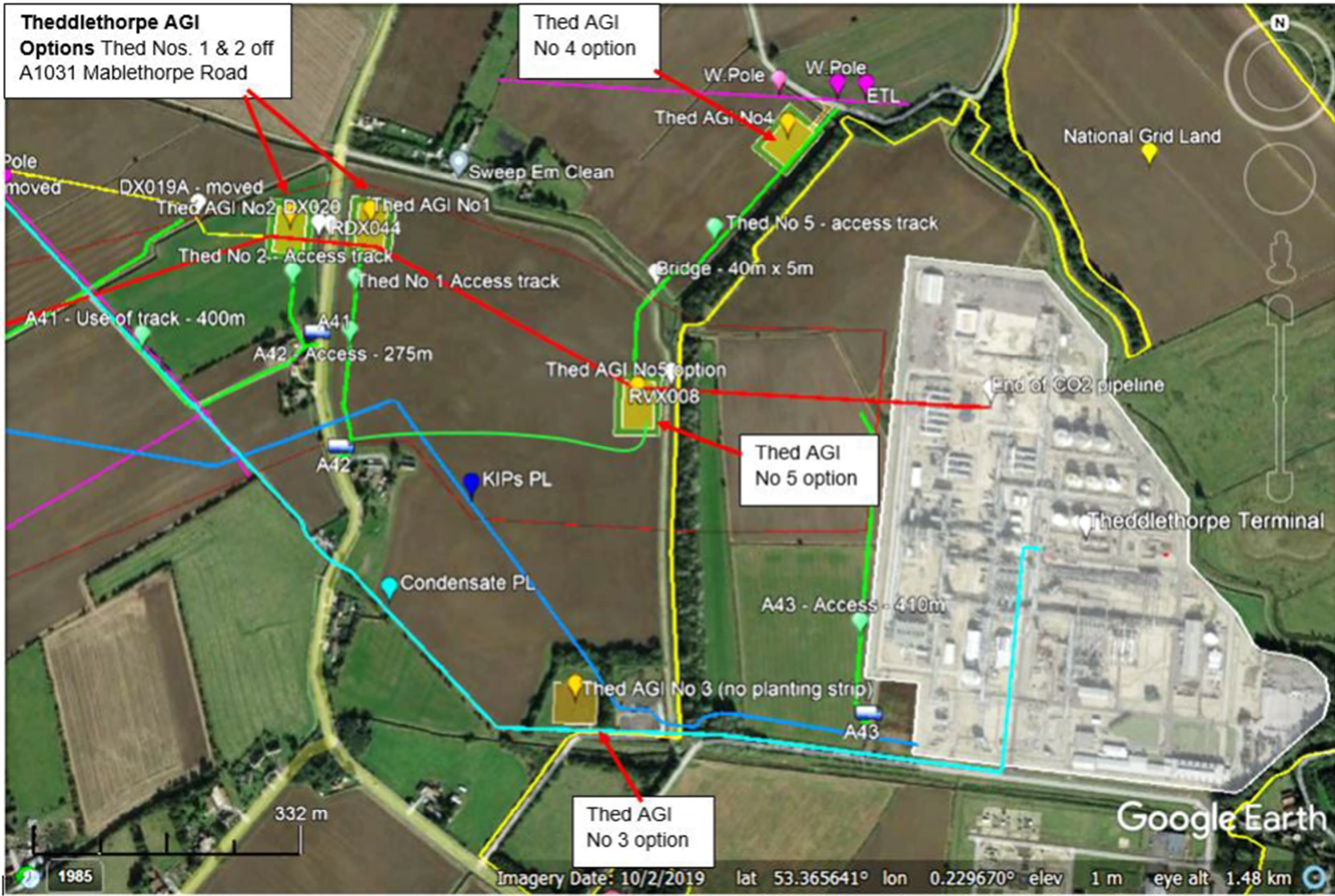
[Redacted] (full name)  
[Redacted] (address).

\*This deed must be executed by two authorised signatories (as defined in section 44(3) Companies Act 2006). They may be either two directors or a director and the company secretary. If only one authorised signatory signs, that person must be a director of the company and a second signatory must witness the director's signature.

Viking CCS Pipeline

**First Written Questions -  
Appendix E: Supporting  
Information for Written Question  
1.3.3**







Viking CCS Pipeline

**First Written Questions -  
Appendix F: Supporting  
Information for Written Question  
1.4.8**



Appendix F: Summary of Construction Stage GHG Emissions

Lifecycle Stages	Immingham facility (Table 15-17)	Theddlethorpe facility (Table 15-18)	Pipeline Section 1 (Table 15-19)	Pipeline Section 2 (Table 15-20)	Pipeline Section 3 (Table 15-21)	Pipeline Section 4 (Table 15-22)	Pipeline Section 5 (Option 1) (Table 15-23)	Washingdales Block Valve (Table 15-25)	Thoroughfare Block Valve (Table 15-26)	Louth Road Block Valve (Table 15-27)	Total (tCO <sub>2</sub> e) (Table 15-16)
Enabling Works	1	1	65	161	289	241	129	<1	<1	<1	887
Construction Materials (+Cathodic Protection)	87	191	5,770	13,857	24,904	20,761	11,526	31	31	30	77,187
Transport of Materials	15	17	328	812	1,461	1,218	656	6	6	5	4,525
Construction Worker Commuting	6	6	6	10	10	10	6	2	2	2	58
Construction Waste	1	<1	123	292	524	437	245	<1	<1	<1	1,622
Total (tCO <sub>2</sub> e)	110	215	6,291	15,131	27,188	22,666	12,562	39	39	38	84,279

Viking CCS Pipeline

**First Written Questions -  
Appendix G: Supporting  
Information for Written Question  
1.15.6**



# Viking CCS

Transforming the  
Humber into a  
net zero SuperPlace



VikingCCS 

 Harbour  
Energy

# Contents

Introduction	4
About the Viking CCS Cluster	5
Key growth opportunities	9
Infrastructure investment	10
Economic opportunity	14
Supply chain	17
Regional skills	21
Low-carbon products and inward investment	23
The potential for growth	26

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# Introduction

As the UK grapples with balancing energy security and decarbonisation alongside a cost-of-living crisis, private-sector investment in carbon capture and storage (CCS) will help secure our energy future, while providing a swift and significant reduction in CO<sub>2</sub> emissions and supporting national and local economic growth.

In 2022, the Committee for Climate Change stated that there is no route to net zero by 2050, nor decarbonising industry while safeguarding jobs, without deploying CCS at scale<sup>1</sup>.

Located in the UK's most industrial and CO<sub>2</sub>-emissions-intensive region, Viking CCS is a flagship project uniquely placed to help the UK decarbonise and grow, by providing a gateway for investment and the development of a regional low-carbon hub. The project plans to store 10 million tonnes of CO<sub>2</sub> (MtCO<sub>2</sub>) a year by 2030 and 15 MtCO<sub>2</sub> a year by 2035, which would meet up to one third of the UK's CCS target<sup>2</sup>.

This would significantly contribute to the UK's net zero targets and strengthen its ambition as a world leader in decarbonisation. Viking CCS will also be transformational for the Humber. It can equip the region with high-capacity, reliable low-carbon infrastructure to promote inward investment and attract new industries. Importantly, it can also support the challenge facing businesses with stranded emissions beyond the Humber region, through the future development of both shipping and expanding pipeline infrastructure networks.

Alongside a diverse range of Cluster members, including Associated British Ports, Phillips 66 Limited, RWE, VPI and West Burton Energy, Viking CCS will stimulate a suite of benefits for the Humber region. These benefits are summarised in this report<sup>3</sup>.

Existing emissions of 10 MtCO<sub>2</sub> a year stored by 2030

---

300 million tonnes world-class, securely-sealed storage

---

Investment of £7 billion by 2035 across the CCS value chain

---

Enabling 10,000 new jobs and 4,000 permanent jobs

---

Delivering GVA of £4 billion

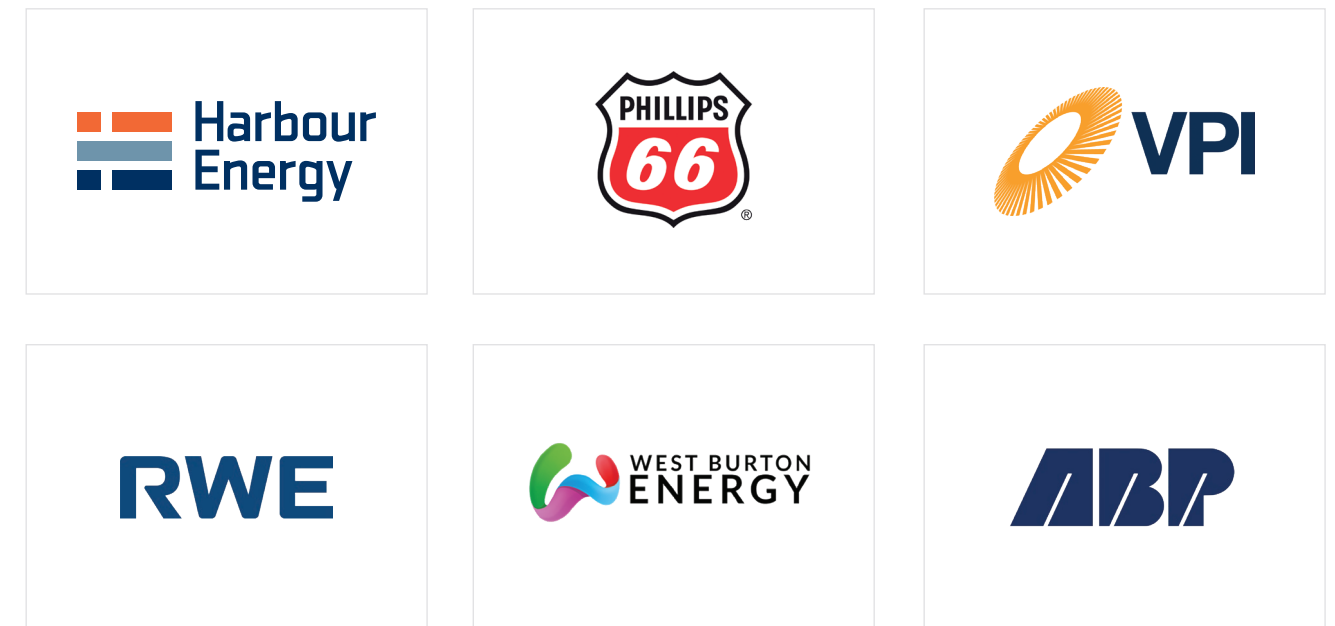
<sup>1</sup> Mission Zero, Independent Review of Net Zero, 2023. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1128689/mission-zero-independent-review.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1128689/mission-zero-independent-review.pdf)

<sup>2</sup> UK Government, Carbon Capture, Usage and Storage, page 7, 2022. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1045066/ccus-transport-storage-business-model-jan-2022.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1045066/ccus-transport-storage-business-model-jan-2022.pdf)

<sup>3</sup> Economic analysis undertaken by Element Energy on behalf of Harbour Energy. Economic improvements, such as GVA and job creation, are calculated from the investment figures by UK input-output tables and various business surveys produced by the Office of National Statistics (ONS). The macroeconomic model considers sectoral import/export statistics, average annual wages and division between direct and indirect impact.

# About the Viking CCS Cluster

The members of the Viking CCS Cluster are working to develop a full-chain CO<sub>2</sub> capture, transport and storage network that will materially decarbonise industry in the Humber, Lincolnshire and Nottinghamshire regions.



The Cluster is committed to supporting the UK's net zero and energy security objectives by decarbonising existing and new-build strategic power and industrial assets. This will contribute to making the Humber, and the UK, leading centres of decarbonisation, while retaining and creating world-class industries.

Through the proposed development of infrastructure, from emissions capture to a pipeline network and a shipping import terminal, the Cluster will support cost-efficient sequestration of CO<sub>2</sub> emissions in Harbour Energy's high-capacity CO<sub>2</sub> storage sites in the southern North Sea.

The Viking CCS Cluster's final investment decision is planned from 2024, with first storage from as early as 2027, assuming government sequencing through its Track 2 process in 2023. The Cluster is targeting 10 million tonnes a year of CO<sub>2</sub> stored by 2030, rising to 15 million tonnes a year by 2035. The project is forecast to deliver £4 billion of gross value add (GVA) across the region.

The project would create new opportunities for highly skilled local employment for up to 10,000 people while safeguarding 20,000 high-value industrial jobs.

These opportunities include developing lower-carbon markets for electric vehicle manufacturing supply chain, sustainable aviation fuel (SAF) and flexible and dispatchable power generation that can supplement variable weather-dependent renewables. This will support a vibrant new lower-carbon industrial ecosystem, attracting and developing talented people.

**10 million**  
Tonnes a year of CO<sub>2</sub> stored by **2030**

**15 million**  
Tonnes a year of CO<sub>2</sub> stored by **2035**

# Viking CCS: The gateway to UK decarbonisation

MtCO<sub>2</sub> = million tonnes of carbon dioxide (CO<sub>2</sub>) emissions per year

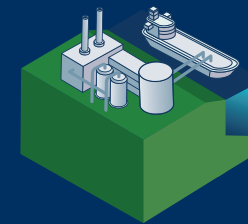
● Associated British Ports (ABP)



## What is carbon capture and storage (CCS)?

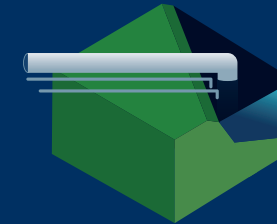
### Viking CCS Cluster

CO<sub>2</sub> emissions are captured from high-emission industries at Immingham and surrounding area Cluster members or imported by ship



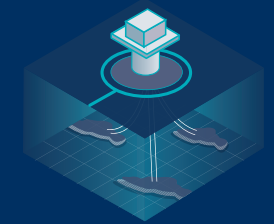
### Viking CCS pipeline

The Viking CCS pipeline safely transports captured CO<sub>2</sub> for 55km to join an existing subsea pipeline



### Carbon storage

Carbon dioxide is stored in depleted gas reservoirs under the North Sea, 2.7km beneath the seabed and 140km from the Lincolnshire coast



### Capture

Our Cluster members will capture over 90% of the CO<sub>2</sub> emitted by their industrial processes, removing it at source by adsorption and separation, so it can be directly routed to a pipeline for transporting to secure storage

### Transport

We will transport the CO<sub>2</sub> through onshore and offshore pipelines designed to handle high volumes. The CO<sub>2</sub> will be transported safely from where it is captured to where it will be stored

### Store

The CO<sub>2</sub> will be stored safely beneath a world-class superseal of high-strength salt layers

## Viking CCS strengths



Re-use of existing infrastructure



Developed by a highly experienced team



Supported by large, reputable, securely financed members

300 million

Tonnes of storage capacity in our depleted Viking gas fields in the southern North Sea

up to 10,000

Jobs potentially created from the capital investment in the Viking CCS Cluster projects

up to £7 billion

Investment over ten-year period from 2025 to 2035

over 40 years

Of track record operating infrastructure projects in the North Sea

over 50%

Of Humber emissions could be captured, transported and securely stored by our project

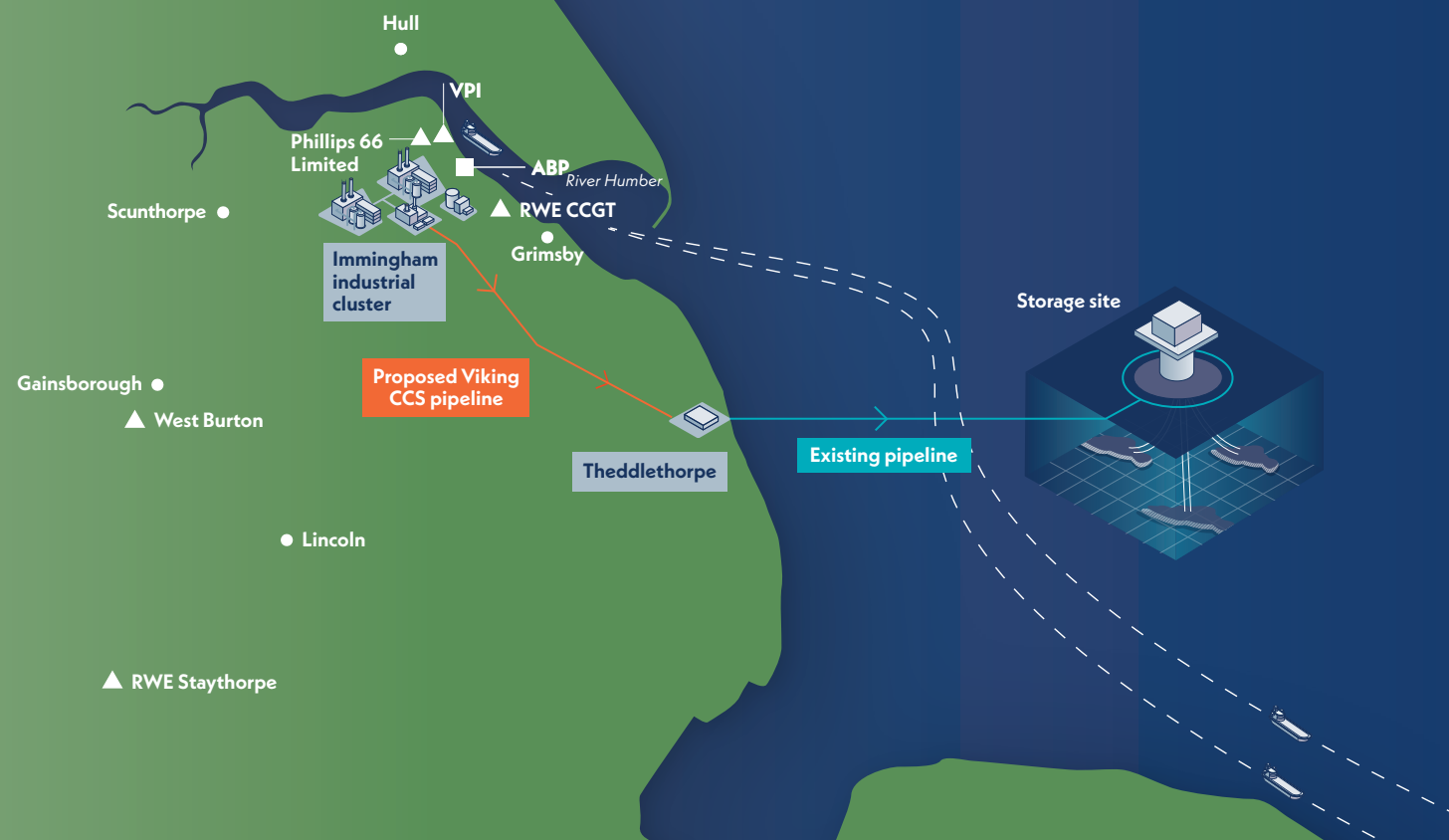
up to 40%

Of UK industrial and power emissions accessible via ABP's network of ports



**Figure 1:** Indicative map of Viking CCS

Key: ▲ Viking CCS Cluster member (emitter)  
 ■ Viking CCS Cluster member (port)



## Key growth opportunities

Viking CCS brings five key opportunities to the Humber and its surrounding regions. These opportunities will shape the area into a low-carbon hub defined by a world-leading CCS Cluster and a skilled workforce. This will underpin future low-carbon investment as well as the growth of new supply chain businesses and state-of-the-art products and markets.



### Infrastructure investment

Viking CCS can lead to £7 billion investment by 2035 in both new and upgraded infrastructure in the Humber.



### Economic opportunity

Deploying CCS in the Humber could produce around 10,000 new job opportunities.



### Supply chain

The forecast £7 billion of capital investment through to the mid-2030s presents a significant opportunity for the UK supply chain and service sector.



### Regional skills

Skills demand for a CCS industry presents a critical opportunity for the Humber region's workforce to develop new low-carbon expertise.



### Low-carbon products and inward investment

Viking CCS low-carbon infrastructure will enable Cluster members to decarbonise current and future product lines, while attracting new low-carbon industries to the Humber region.

## The role of Viking CCS in the Humber

Viking CCS will play a pivotal role in decarbonising the strategic industries located in the Humber, Lincolnshire and Nottinghamshire regions, home to Phillips 66 Limited, VPI Immingham, RWE and West Burton Energy.

The scale of investment from the Cluster members will enable Viking CCS to transform the Humber. The project's high-capacity, reliable low-carbon infrastructure can act to promote inward investment to the area and attract new industries, stimulating national and local economic growth, at the same time as supporting the UK in reaching its net zero targets. This transformation will be achieved by:

1. Progressing the development of the Viking CCS Cluster's projects to significantly reduce CO<sub>2</sub> emissions from as early as 2027 and contribute to the UK Government's ambitious net zero targets, subject to the necessary processes, business model support and final investment decisions.
2. Contributing to the creation of the jobs and skills required for a sustainable national CCS supply chain and UK export of lower-carbon products and services.
3. Working with communities and key stakeholders on CCS, sharing knowledge and lessons from the Viking CCS Cluster development.
4. Enabling the production of lower-carbon products and services, including promoting investment in decarbonisation technologies and future interconnection of CO<sub>2</sub> transport networks to increase the region's economic attractiveness to industry and investors.



# Infrastructure investment



Harbour Energy is the developer of two key pieces of infrastructure for the Viking CCS project.

**The CO<sub>2</sub> transport infrastructure:** Part of the infrastructure we plan to use for CCS transportation is already in place. A legacy Harbour Energy company developed and operated a high-capacity offshore pipeline to transport extracted natural gas from the Viking gas fields to the former Theddlethorpe Gas Terminal. We therefore have the detailed knowledge and experience to reuse this pipeline for transporting CO<sub>2</sub> to the offshore storage site. An additional new spur line will carry the CO<sub>2</sub> for the final 20km of its journey to storage deep underground. To complete the chain of transportation, we plan to lay a new 55km onshore buried pipeline connecting the Immingham industrial cluster to the former Theddlethorpe Gas Terminal. The onshore pipeline is currently progressing through the Development Consent Order process.

**World-class CO<sub>2</sub> storage potential:** The Viking reservoirs are well-defined and understood – Harbour Energy's legacy companies have been extracting gas from them for the past 40 years. These reservoirs are now depleted and at low pressure, and so available for storing CO<sub>2</sub>.

In what we believe is a northern hemisphere first, Harbour Energy commissioned ERCE to complete a Competent Person's Report on the storage capacity of the Viking CCS project, and to audit our storage estimate. This confirmed that our estimate of 300 million tonnes of storage for the Viking CCS project is fair and reasonable.

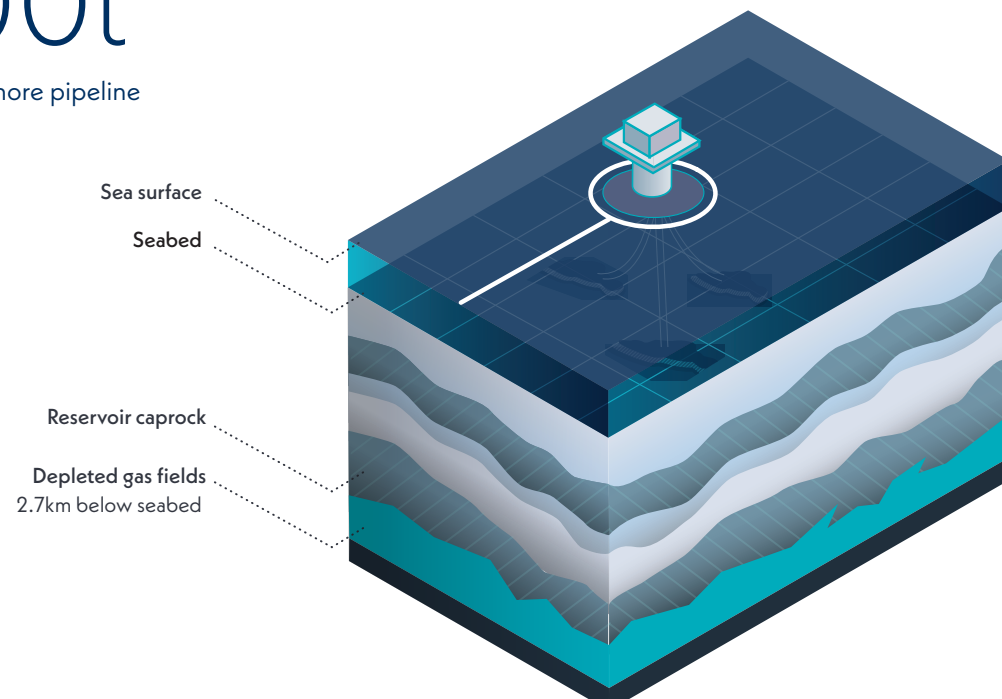
Working together, Harbour Energy and Associated British Ports plan to develop a CO<sub>2</sub> import terminal at the Port of Immingham, the UK's largest port by tonnage. This will link to Harbour Energy's Viking CCS CO<sub>2</sub> transport and storage network. The terminal will provide a large-scale facility to connect stranded CO<sub>2</sub> emissions from industrial companies around the UK to the high-capacity CO<sub>2</sub> storage sites in the southern North Sea.

## 2.7km

Depth of CO<sub>2</sub> storage site below the seabed

## 70,000t

CO<sub>2</sub> saved by reusing offshore pipeline



The Viking CCS Cluster includes large existing industrial emitters and power stations that plan to construct and operate CO<sub>2</sub> capture plants as well as the infrastructure needed:

### Humber Zero

Humber Zero is a world-scale series of projects to reduce the carbon emissions of critical industry in the Immingham industrial area using carbon capture. The project is a consortium between Phillips 66 Limited and VPI Immingham LLP and aims to remove 8 million tonnes of CO<sub>2</sub> a year from the Immingham industrial area.

The carbon emissions from some processes at the VPI Immingham Combined Heat and Power Plant and Phillips 66 Limited Humber Refinery will be captured and compressed. As part of Phase 1 of the wider Humber Zero decarbonisation project, VPI Immingham (one of Europe's largest combined heat and power facilities, with a capacity of 1.3GW) aims to retrofit two of its gas and steam turbines with CCS, capturing up to 3.4 MtCO<sub>2</sub> a year by 2027. Phillips 66 Limited Humber Refinery is also developing new lower carbon business streams, so it can transition its business to one that is ready for the future and can contribute to decarbonising other sectors.

### West Burton Energy

One of the UK's most modern and efficient natural gas plants will contribute to achieving net zero by deploying CCUS capabilities.

West Burton B is a highly flexible and efficient Combined Cycle Gas Turbine Plant with a combined output of 1.3 GW of energy, including 49 MW of battery storage capacity. West Burton B supplies electricity for the UK residential market, as well as providing essential services to the national electricity transmission system, so helping the transition to a low-carbon economy.

West Burton Energy intends to deploy post-combustion technology to capture up to 90% of its carbon emissions as part of its wider decarbonisation strategy. This will include deploying hydrogen co-firing, and building further electricity storage facilities.

More than

## 5GW

Of power decarbonised between VPI, RWE and West Burton's modern gas-fired power stations

Equivalent to

## 5 million

Homes' electricity supply decarbonised



## RWE

RWE is the UK's largest operator of combined cycle gas turbine (CCGT) power plants. Its 7GW gas fleet complements a 2.8GW renewables portfolio by providing security for the UK energy supply. RWE's long-term vision is to be carbon-neutral by 2040 across its global operations, with its UK operations leading in achieving this goal.

RWE has a wealth of experience in the design and operation of carbon capture plants, having been involved in developing carbon capture technologies since 2008. RWE is developing low-carbon generation options using both carbon capture and hydrogen technologies to decarbonise its sites.

RWE has begun the necessary technical studies to investigate the feasibility of retro-fitting carbon capture technology at Staythorpe, and has started to develop a new state-of-the-art CCGT equipped with carbon capture technology near the Humber. Together, these projects could capture and remove roughly 6 million tonnes of CO<sub>2</sub> a year.

## Associated British Ports

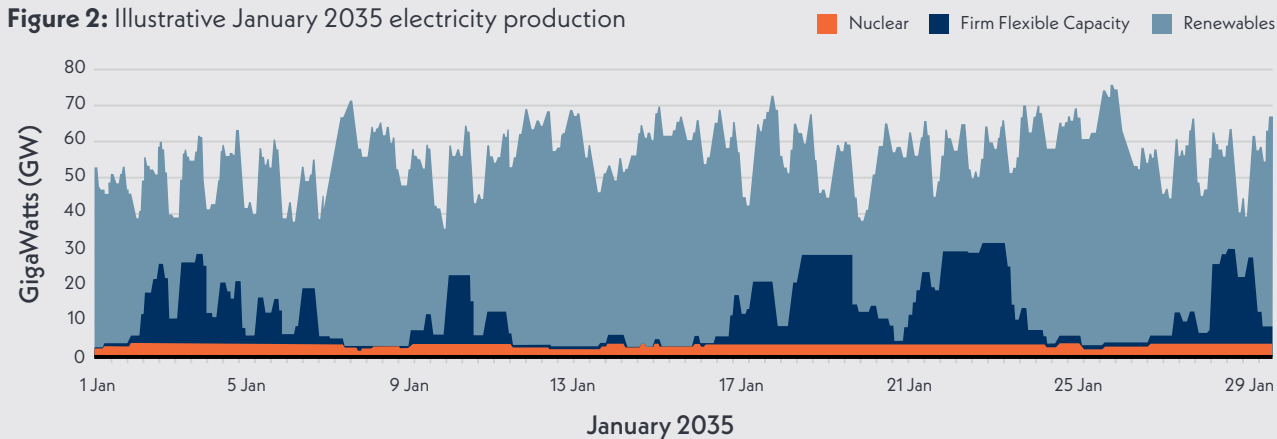
The Port of Immingham, owned and operated by Associated British Ports (ABP), is part of ABP's Humber ports along with Grimsby, Hull and Goole. Together they make up the UK's largest ports complex. ABP is investing in new infrastructure, with a new jetty to service the import and export of liquid bulk products. As well as handling green ammonia, the jetty is being designed to accommodate other cargo connected to the energy transition, including the import of liquified carbon dioxide (CO<sub>2</sub>) from CCS projects, for sequestration in the southern North Sea – and so playing a significant role in the UK's energy transition.

This new infrastructure aims to provide a huge opportunity to connect otherwise stranded industrial clusters in the UK to Harbour Energy's high-capacity offshore CO<sub>2</sub> storage sites in the southern North Sea. This exciting development underpins both future inward investment to the Humber and Lincolnshire regions and acts to safeguard industrial jobs across the UK, in support of the UK government's efforts to decarbonise industry in the UK and meet its net zero emissions targets.



## The need for abated gas-fired power

**Figure 2:** Illustrative January 2035 electricity production



In the UK Climate Change Committee's (CCC) Balanced Net Zero Pathway<sup>4</sup>, there is a doubling of electricity system demand between 2018 and 2050, from around 300TWh of electrical energy used today, to around 600TWh in 2050. This increase in electrical demand is mainly due to electric vehicles and similar, plus increased electrical home heating (such as heat pumps). The CCC Balanced Net Zero Pathway forecasts an increase of renewable electrical generation to 80% by 2050, particularly from offshore wind providing the backbone of the UK's electrical system, with the phasing out of unabated gas-fired power by 2035.

CCC see the need for 15GW of flexible low-carbon generation by 2050, particularly during low production of weather-dependent renewables. Abated gas-fired power generation – that is gas-fired power stations with CCS – can provide a firm, reliable source of dependable low-carbon supply to the UK electrical system. The Viking CCS Cluster plans to decarbonise over 5GW of low-carbon gas-fired power by the early 2030s, meeting one third of the CCC Balanced Pathway target and materially supporting the required 50TWh of low-carbon dispatchable generation needed to ensure security of supply by 2035.

<sup>4</sup>The Balanced Net Zero Pathway of CCC's Sixth Carbon Budget estimates a UK-wide CO<sub>2</sub> storage rate of 52.8 MtCO<sub>2</sub>/year by 2035. <https://www.theccc.org.uk/publication/sixth-carbon-budget/>

## The investment opportunity

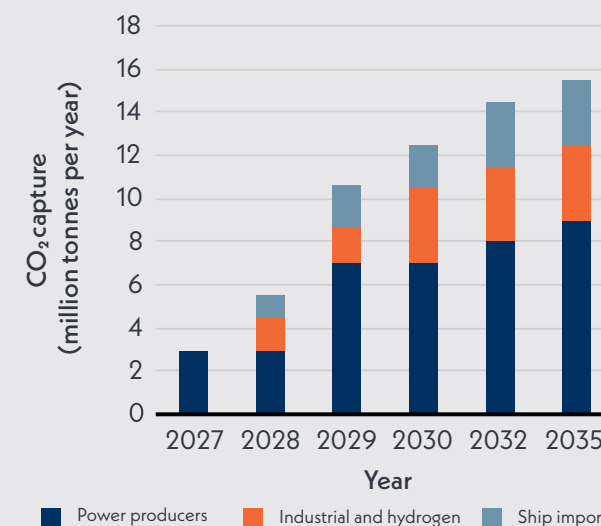
**More than 100 MtCO<sub>2</sub> could be permanently stored by 2035 through Viking CCS.** (Figure 3 shows predicted volumes for specific years to 2035). The first volumes of CO<sub>2</sub> are expected to be captured by the VPI capture project in 2027, with other projects and ship imports following from as early as 2028. **The total annual CO<sub>2</sub> transported and stored by Viking CCS could reach 15 MtCO<sub>2</sub> by 2035**, with 3 MtCO<sub>2</sub> annually through shipping import from UK sources. This would represent almost one third of the UK needs for CO<sub>2</sub> storage in 2035 according to the Balanced Net Zero Pathway in CCC's Sixth Carbon Budget<sup>4</sup>, which estimates a need for over 50Mt a year of CO<sub>2</sub> storage by 2035.

The private-sector-led capital investment to develop all of the planned projects within the Viking CCS Cluster is projected to reach over £7 billion to 2035, across capture, transport and storage projects. This does not account for the private-sector investment in the export terminals or capture projects as part of an integrated shipping value chain.

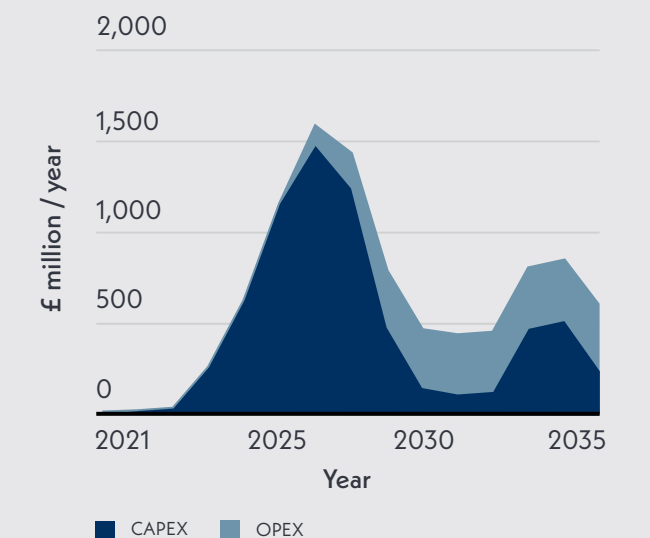
As shown in Figure 4 below, annual investment for Viking CCS is projected to peak from 2026-2028 (with £1.6 billion projected in 2027) as most capture plants are planned to be built, and the CO<sub>2</sub> transportation and storage infrastructure is expected to become operational in this period. A secondary investment peak is expected in the early 2030s and is sustained (over £800 million in 2034) due to expansion of the CO<sub>2</sub> transportation and storage infrastructure and capture plants. The new infrastructure is a way to promote sustained inward investment, and can help underpin long-term job creation in the region.

A significant portion of the investment is associated with the CO<sub>2</sub> capture plants. The repurposing of existing infrastructure provides for a relatively low initial cost of the transport and storage infrastructure, with expansion of storage opportunities over time as the demand increases. Overall, 70% of all spending is associated with capital expenditure, leading to the creation of significant benefits in equipment manufacturing and construction activities.

**Figure 3:** Annual volumes of CO<sub>2</sub> captured or processed by different sources

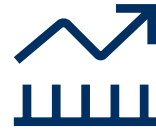


**Figure 4:** Annual total capital and operational spending across Viking CCS Cluster (includes capture, port, pipeline and storage projects)





# Economic opportunity



The potential for the Humber and North East of England to benefit from the net zero transition economy was confirmed as "the economic opportunity of the 21st century" in the recent Government-commissioned Skidmore Net Zero Review<sup>5</sup>.

The Humber region has the opportunity to be at the epicentre of a UK infrastructure and industrial rejuvenation. The Humber is home to some of the largest UK offshore wind farms, has an existing large industrial base through refining, petrochemicals, manufacturing and power generation, and hosts the UK's largest port complex by tonnage, in the Port of Immingham.

Decarbonising the high-quality gas-fired generation assets of the Lincolnshire and Nottinghamshire regions will provide vital low-carbon energy security for the UK throughout the 2030s and 2040s. These facilities are foreseen to continue playing a critical role in the UK's decarbonised energy mix.

Infrastructure is seen as the key that will unlock net zero<sup>5</sup>. The Viking CCS network provides at-scale high-capacity CO<sub>2</sub> transportation infrastructure to the Humber region. Due to the planned development of this infrastructure, there is the potential to promote further inward investment to the region. RWE recently announced development plans to investigate the construction of a new gas-fired power station on the South Humber Bank, purpose built with carbon capture technology, with an investment in the region of £1 billion.

The new low-carbon energy infrastructure presents opportunities for developing broader supply chains, with the availability of decarbonised power, industrial skilled labour and access to CCS infrastructure acting as a magnet to other industries.

Viking CCS can bring significant opportunities for economic growth (presented in Figure 5), increasing the gross value added (GVA)<sup>6,7</sup> and bringing new employment opportunities. GVA is a term used in economics to describe the measure of goods and services produced (in this case through the cluster's development activities), and can help government determine the important contributions to the UK's Gross Domestic Product (GDP) growth. Annual GVA contribution follows a similar pattern to overall investment, with two peaks in 2026-28 and 2033-35 when the bulk of the construction takes place. Across the modelled period to 2035, cumulative GVA is estimated to reach £4 billion, 56% of which is expected to be direct contributions<sup>8</sup>.

Figure 5: Annual direct and indirect GVA generated by Viking CCS

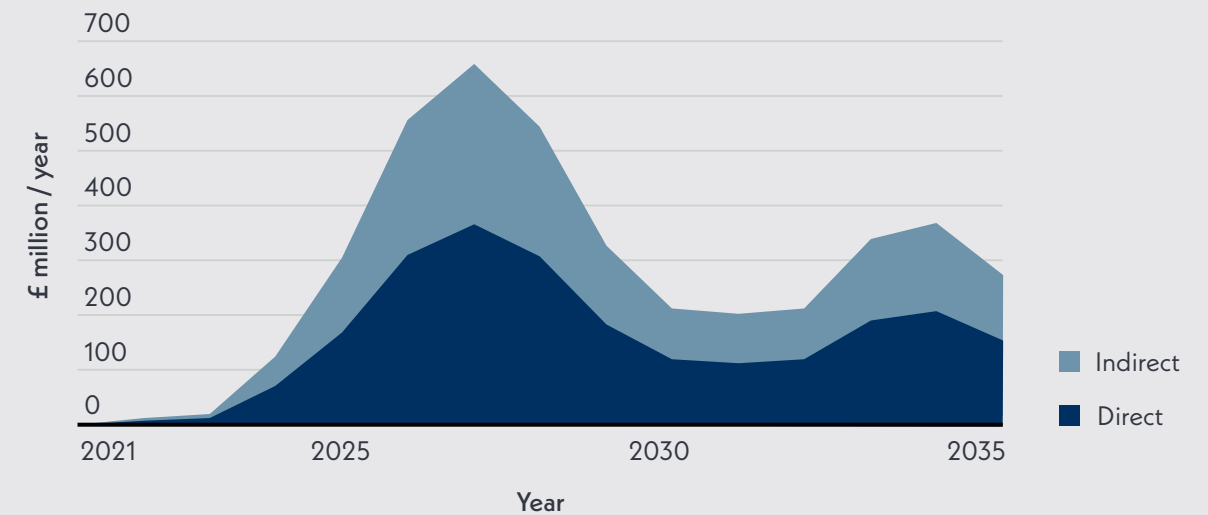
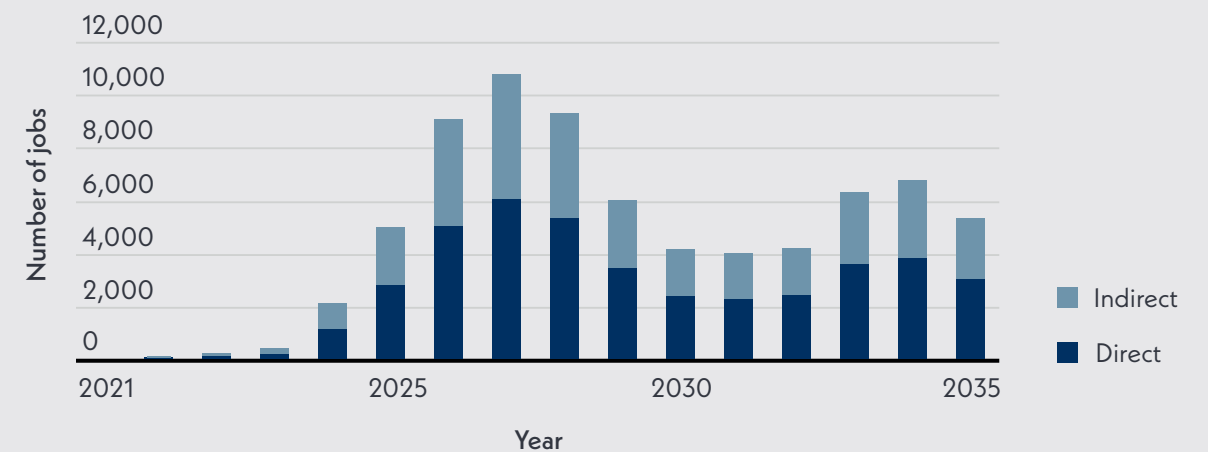


Figure 6: Annual direct and indirect jobs supported across the Viking CCS project proponents



Viking CCS is estimated to support<sup>9</sup> around 10,000 jobs (56% directly) in 2027 at the peak of various construction activities (Figure 6), which is just under half as many construction-phase jobs associated with Hinkley Point C<sup>10</sup>. As the new infrastructure develops there is a foreseen shift from construction and engineering roles to permanent operational and maintenance roles.

The Viking CCS Cluster premises continued capital investment for the decade between 2025 and 2035, with a sustained need for large numbers of skilled workers. This is forecast to bring indirect benefits to the regional economics as workers maintain a presence in

the region for multiple years, over a series of projects, allowing secondary economic growth for housing and services in the local economies.

By 2035, approximately 4,000 permanent jobs are forecast to be supported, across a range of industries associated with operation of the carbon capture plants and other infrastructure. The job creation and economic growth opportunities at a site level are also significant, as shown for VPI Immingham in the case study on page 16.

<sup>5</sup> Mission Zero, Independent Review of Net Zero, 2023. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1128689/mission-zero-independent-review.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1128689/mission-zero-independent-review.pdf)

<sup>6</sup> Gross value added (GVA) is the net positive economic impact an investment or activity has on an economy. It is calculated by adjusting investment levels according to value moving outside the UK.

<sup>7</sup> Quoted GVA does not consider the secondary impacts of wages/profits to the wider economy

<sup>8</sup> Direct GVA refers to value created in primary sectors delivering a project (e.g., a factory producing the carbon capture equipment).

Indirect GVA refers to value added through the supply chains of these primary sectors (e.g., energy used to produce the carbon capture equipment).

<sup>9</sup> In this study 'jobs supported' refer to the number of full time equivalent (FTE) jobs associated with the Viking CCS Cluster each year. Some of these jobs may be newly created and others may be preserved or displaced from other parts of the economy.

<sup>10</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/725960/HPC\\_Benefits\\_Realisation\\_Plan.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/725960/HPC_Benefits_Realisation_Plan.pdf)





### The economic opportunity: VPI Immingham

VPI is a leading UK energy company with five combined cycle gas turbine (CCGT) assets. Its largest state-of-the-art facility, a combined heat and power (CHP) plant in Immingham, has a capacity of 1.3 GW, and is one of the major CO<sub>2</sub> emitters of the Humber industrial cluster. It supplies energy both directly to local refineries and to the grid.

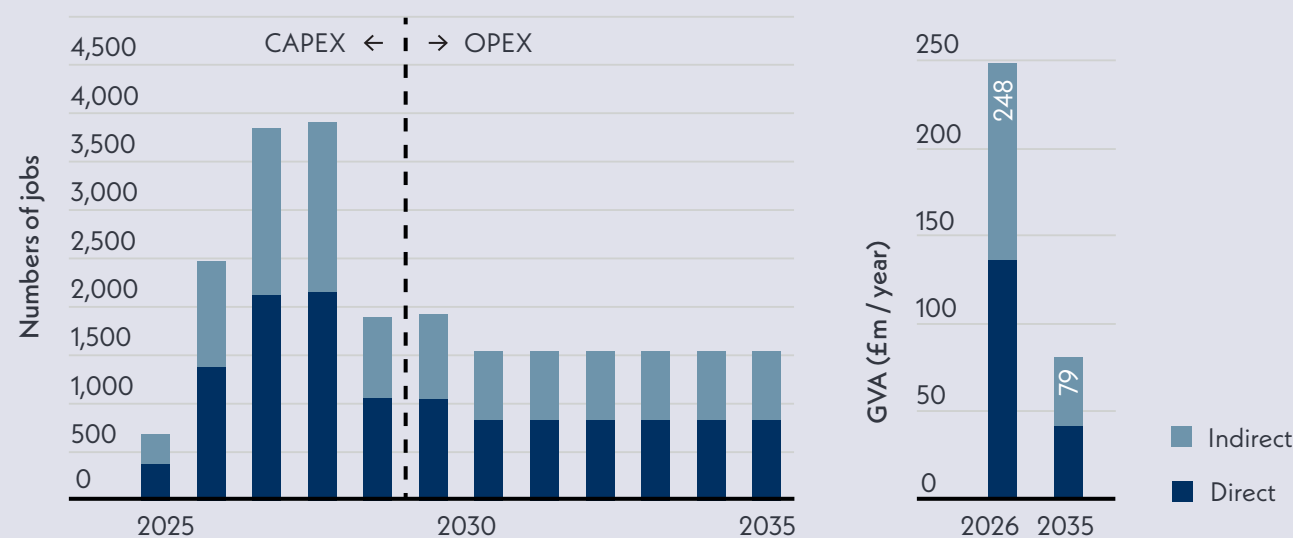
VPI Immingham has decarbonisation plans including CCS and fuel switching to hydrogen. As part of Phase 1 of the wider Humber Zero decarbonisation project, VPI Immingham aims to retrofit two of its gas and steam turbines with CCS, capturing up to 3.4 MtCO<sub>2</sub> a year by 2027. Phase 2 will then involve converting its third turbine (530 MW) to hydrogen, which is anticipated to be supplied mainly through a new hydrogen-generation plant on site. Up to 5.3 MtCO<sub>2</sub> captured on site through these efforts will be transported through Harbour Energy's Viking CCS pipelines and stored permanently in depleted gas fields offshore.

Over the 2024-2029 period, VPI Immingham's decarbonisation plan is estimated to cost more than £1.5 billion in capital investment. Once operational expenses are accounted for, this level of investment leads to a cumulative GVA of £1.4 billion by 2035.

As shown in Figure 7, peak annual GVA is expected to occur in 2026 (£250 million), where construction of CCS plants is expected to support just under 4,000 jobs annually, including the wider supply chain. During the operational phase of the decarbonisation projects (after 2028) around 1,500 permanent jobs are estimated to be supported across the supply chain, half of which are directly related to plant activities in the Humber region.



**Figure 7:** Annual direct and indirect jobs supported by CCS activities at VPI Immingham during project construction and operation phases (left), and annual direct and indirect GVA achieved in selected years (right)



## Supply chain

The Viking CCS Cluster is forecast to begin construction from late 2024, with initial projects aiming for first storage and commercial operation from 2027. The forecast £7 billion of capital investment through to the mid-2030s will generate sustained demand for skilled jobs in the supply chain across the regional and national economies.

This private-sector capital investment demand presents a significant opportunity for the UK supply chain, and Viking CCS Cluster members are committed to contributing to the creation of the jobs and skills required.

Across the UK, there is forecast significant growth in industrial and infrastructure construction demand, including the expansion of the UK offshore wind industry and the potential for expansion of nuclear power. At the same time, there is a need to decarbonise the UK's existing industrial and gas-fired power assets by deploying multiple CCS clusters in the late 2020s and early 2030s.

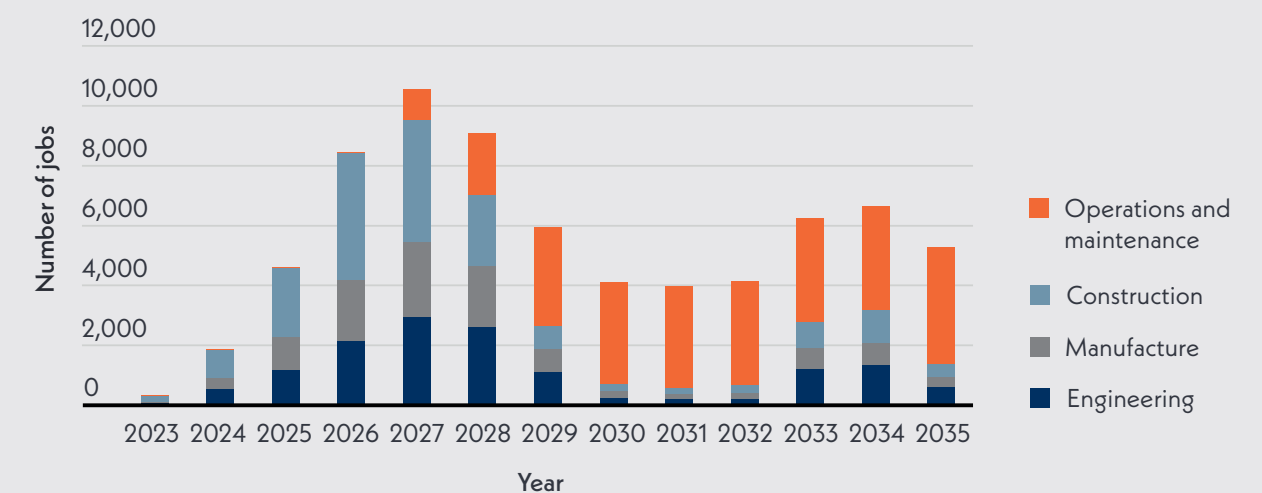
UK infrastructure deployment also coincides with an existing pipeline of other global projects, notably in the oil and gas sector, to meet sustained demand for hydrocarbons.

Adding to this demand, the number of CCS projects in development globally was at record levels in 2022, with over 150 projects in planning, led by the US and followed by Canada, UK, Norway, and Australia. As highlighted in the recent Chris Skidmore MP-led Net Zero review, this presents global competition, not only for investment capital but for the skilled labour required to develop these major capital projects.

Meeting the private-sector capital investment demand with UK supply chain capabilities is seen as both a key objective for the Viking CCS Cluster members, and also a major risk for the project's successful deployment, given the global demand for materials and skilled labour.

This analysis highlights key areas of the supply chain procurement needs across the range of industrial sectors, along with examples of where UK supply chain risks exist. The objective for this is to provide a platform for ongoing discussion with supply chain members and other relevant stakeholders such as government, trade industry bodies and skills suppliers.

**Figure 8:** Capital investment creates job demands across a range of sectors (includes capture, port, pipeline and storage projects)



## Supply chain capacity by key area

This section provides a summary by key sector for UK supply chain capacity and foreseen availability within the deployment period for the Viking CCS Cluster.

### Engineering

The UK has a well-established engineering supply chain for the oil and gas, oil refining and petrochemical industries. The technology and skills required to support CCS deployment are similar and generally compatible. It is foreseen that the established engineering service suppliers should be able to compete effectively to supply CO<sub>2</sub> capture, storage and transportation projects.

Given increased global demand for UK engineering, and a range of other labour-market factors within the UK (including UK-EU relations, the recent 2015-to-2017 UK energy industry downturns and the Covid-19 pandemic), capabilities for skills and personnel available to support the supply chain for project management and engineering services may have been affected.

Providing the Viking CCS Cluster front-end engineering and design (FEED) services has been completed through UK-sourced engineering services, leading to a significant investment of over £30 million in the sector to date. Feedback from the UK engineering providers regarding the skilled labour necessary for the increased demand for detailed engineering and procurement support indicates the labour market tightening, with competition for availability, and that the current market conditions should not be treated as business as usual.

This presents an opportunity for the Viking CCS Cluster members to engage early with engineering supply chain partners. However, it also presents a risk for the availability of the traditionally strong UK engineering service sector to meet the needs for projects. Plans to overcome this include:

- early discussions with engineering service providers to signal investment timing
- continuing to develop key strategic partnerships with engineering providers through FEED.

# £7 billion

2025-2035 investment opportunity for the UK supply chain at risk

### Manufacturing

Viking CCS Cluster members have a broad range of equipment-manufacturing and procurement needs; from large-scale capture plant processing equipment and pressure vessels, to significant quantities of high-grade steel line pipe, large numbers of valves and ancillary mechanical and process control equipment.

Detailed procurement mapping has been undertaken in the pre-FEED stages to understand the UK manufacturing base's capabilities for supply. During this mapping it was noted that many suppliers use competitive global supply chains. The location for manufacturing equipment is generally not specified until a detailed procurement proposal, often at the point of order, with suppliers reluctant to spend valuable bid-preparation time on queries at the early pre-FEED project stage. Therefore, there is a range of uncertainty about UK manufacturing for many of the process control and mechanical equipment items.

Material procurement and manufacturing items within the Cluster capital-investment programme include:

- Manufacture of large-diameter steel line pipe, in 24" and 36" diameter
- Fabrication of offshore structural jacket and topsides for the injection facilities
- Supply of large pressure vessels for CO<sub>2</sub> capture and processing equipment.

### Line pipe

Procurement of line pipe represents a significant proportion of spending for the initial transportation and storage deployment on Viking CCS.

There is currently only one pipe mill in the UK capable of manufacturing the 24" and 36" line pipe to the relevant specification for Viking CCS. There are multiple European and global line pipe suppliers. With the requirement for a competitive sourcing process for the supply of line pipe, the ability of the UK supply chain to secure and deliver the order for Viking CCS is uncertain.

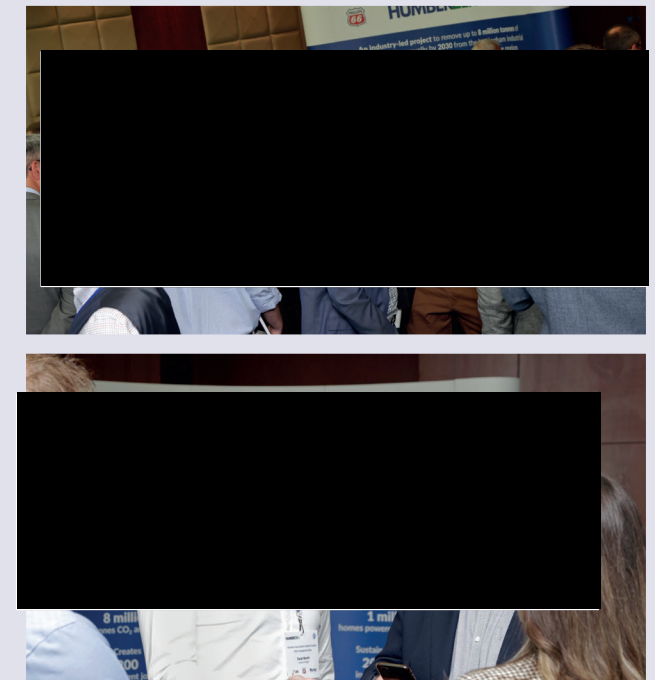
Future discussions with the sole UK provider regarding its future capacity and lead time is planned during FEED. In the global line pipe market, a lead time for manufacturing of 52 weeks is standard, however that is purely the manufacturing time. A further year to secure a manufacturing slot is also projected, which is material for project investment decisions and delivery schedule.

# HUMBERZERO

## Regional supply chain event

Humber Zero held an event for potential suppliers at the Forest Pines in Scunthorpe last year. Speakers included project leaders and Dr William Joyce from UKRI. The event was over-subscribed, with 180 UK companies interested in becoming suppliers to the Humber Zero carbon capture project.

Companies from as far afield as Aberdeen and Southampton made the journey and were given an overview of the project along with possible opportunities to supply goods and services. Humber Zero launched a specific supplier page on its website and invited companies to sign up to the Phillips 66 Limited and VPI Immingham strands of the project.



### Offshore structure fabrication

The UK fabrication yards capable of offshore structure fabrication have seen recent sustained demand from the offshore wind industry. From engaging with UK fabrication yards it is currently forecast that there is no availability for the Viking CCS offshore injection platform. Of the many UK fabrication yards contacted, only one responded positively to having capacity for the Viking CCS structure fabrication, with a minimum of two years from order placement to a manufacturing slot. The remaining UK yards contacted either did not respond or confirmed they were no longer interested in jacket and topsides fabrications due to the growth of demand from offshore wind farms. It may therefore be necessary to source the injection platform from the European market, including fabrication sites in Norway, Netherlands or Spain.

### Pressure vessels

There are no longer UK fabricators capable of building the type of large, low-pressure vessels needed for the scale of CO<sub>2</sub> capture equipment, with dimensions of up to 7m diameter and over 40m in height. Recent similar sized vessels required sourcing from the USA, Spain, Italy, India, South Korea and Japan. UK fabricators could develop this capacity, subject to investment. This would help shorten supply chains and encourage further investment. However, with firm contracts not yet tendered, there is a timing and investment confidence mismatch. Clear signals of the UK Government's commitment to CCS deployment would help bridge the UK market's investment confidence in this area.

### Construction

Viking CCS is estimated to support up to 4,000 jobs at the peak of various construction activities. The Viking CCS Cluster construction phase from 2025 through to the early 2030s will be concurrent with the deployment of other CCS projects across the UK and with other infrastructure and energy projects.

It is estimated that there are 10,000 travelling construction contractors available in the UK, with approximately 5,000 of these engaged and committed at Hinkley Point C nuclear power station. Recent large maintenance programmes in both the downstream refining sector and the upstream offshore oil and gas sector have experienced challenges in securing adequate numbers and capabilities of contractors, with impacts to productivity. With peak construction resources for the Viking CCS Cluster projects of between 2,500 and 4,000 workers sustained from 2026 through to 2030, access to a high number of capable workers is a critical risk for the projects, and a significant opportunity to invest in UK skills and labour force.

Challenges to developing the number of skilled construction labour resources have included an ageing demographic, a lack of apprentices, and post-Brexit visa restrictions on non-UK semi-skilled labour, which together have significantly reduced the labour pool. The Humber Industrial Cluster Plan study on skills provision has shown that while there is a 10% reduction in the current available Humber workforce





## Regional skills

Establishing a CCS industry in the UK, led by the major projects of the Viking CCS Cluster members, throughout the 2020s with sustained investment into the 2030s, presents a significant opportunity for the Humber region to benefit from skills development. It also presents an opportunity to de-risk delays by developing a regional talent pipeline.

By decarbonising the industrial basin in the Humber, Viking CCS and its industrial members are helping to ensure existing jobs directly and indirectly linked to these industries are safeguarded, while creating new job opportunities. To secure this economic opportunity for the Humber, sustained investment in skills development is required to develop a pipeline of local and regional talent who want to enter the CCS sector.

CCS is not a well understood or recognised industry by the UK public. To promote an inclusive and interesting career path for school leavers and current workers looking to change careers needs a programme of outreach to make the industry more accessible and appealing.

During the 14 in-person consultation events hosted by Viking CCS throughout 2022, as part of the Development Consent Order process for the new onshore pipeline infrastructure, members of the public showed a keen interest in the role for CCS in the UK's net zero targets and the technologies involved. These consultation events provided an insight into the depth of interest in the energy transition, raising awareness for the key opportunities, challenges and risk-management requirements for at-scale CCS deployment. While these consultation events were part of the DCO process, it has highlighted the importance of in-person events to

communicate the broader need for CCS as one of many technology pathways to net zero, and why the CCS pathway can contribute meaningfully to the future regional economies.

Building on this, Viking CCS is engaging with independent training providers across the Humber including CATCH UK and both the Hull and East Yorkshire Local Enterprise Partnership (HEY LEP) and the Greater Lincolnshire Local Enterprise Partnership, to fund two full-time roles, with the aim of increasing and promoting connections between industrial, schools, colleges and independent training providers. These roles will work across the energy transition sector.

Both Local Enterprise Partnerships in the Humber have Careers Hubs funded by the Department for Education through the Careers and Enterprise Company. Viking CCS has co-funded one full-time Enterprise Coordinator role to work across both Careers Hubs and engage over 90 schools and colleges within Lincolnshire and Yorkshire. This will ensure that industry skills and knowledge are better embedded in careers programmes.

This is a first step towards a sustainable effort at building knowledge and excitement in the future skills pipeline of students needed for the industrial investment demand to follow.

by 2030, there is an increase in demand by 30% – overall a 40% gap in requirements for skilled labour to meet the investment opportunity to rejuvenate and decarbonise the long-term industries of the region.

The Viking CCS Cluster members advocate for an early and massive increase to apprenticeship training and skilled craftspeople STEM career paths, to incentivise school leavers to return to UK industry and industrial regions, along with appropriate targets for certain skilled craftspeople's visas. The following section describes the early steps the Viking CCS Cluster members are taking, working with key skills and education providers in the region.

### Summary

The Viking CCS Cluster procurement will take place within a globally competitive supply chain market, with constraints on availability. The current tight market conditions and the first-of-a-kind nature of the CCS industrial deployment in the UK leads to an elevated supply chain risk to schedule and costs.

Provision of engineering services is expected to be met through a majority of UK content, with a distribution of engineering jobs around the UK and not highly concentrated in any one region.

UK manufacturing capability and provision for large items of procurement such as line pipe, offshore structures and pressure vessels is less certain, with material constraints on both the number of providers and the interest in the CCS industry, given concurrent global demand and the rapid growth in the UK offshore wind sector.

UK and regional construction labour availability remains a key risk, for a rapidly approaching construction window from 2025 through to 2030. Competition and project retention for critical skills is likely to be a challenge in tight labour-market conditions. Sustained cross-industry and government investment in skills programmes to supply the number of construction workers needed is required, with a closing window for this to make a meaningful difference to the availability of labour in the initial construction period for 2025.

## Case study

### The search for tomorrow's industry champions

CATCH is a membership organisation for the Humber's energy-intensive industries, providing industry-leading training facilities for the Humber, Lincolnshire and Yorkshire regions.

Research undertaken by CATCH confirms that there will be a significant surge in demand for skilled labour from 2024, with up to an estimated 23,000 new industrial jobs required across all regional projects. The research highlighted that there will be a significant gap in skills supply that needs to be addressed within two years, for projects to start and be completed on time.

Coming in 2023, to complement training in process operations, mechanical, electrical and instrumentation standards, the CATCH Welding & Pipefitting Hub is an employer-led project to ensure the region has the right level of skills to meet the demand of existing process-industry projects, and help the UK with the huge construction projects industrial decarbonisation needs. The hub will have four main capabilities: Schools STEM Engagement (Harbour Energy is supporting a role within CATCH to enable this); Level 3 Apprenticeship training; upskilling existing employees in industry; and re-training programmes for new entrants and returners to industry.



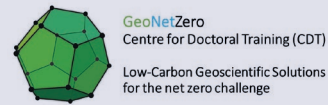


### Commitment to academic research and training

Harbour Energy supports the UK's Centre for Doctoral Training (CDT) called GeoNetZero. A partnership between twelve UK universities to assess the role of geoscience in meeting net zero emissions targets, the CDT is led by Aberdeen University's Director for Energy Transition, Professor John Underhill.

The prime objective of the £23 million programme is to characterise the subsurface and seabed to inform renewable energy, marine planning and regulatory choices to help the UK meet its net zero targets.

The programme's projects focus on the UK Continental Shelf and span the full range of renewable energy.



Several projects focus on evaluating subsurface carbon-storage sites in the southern North Sea, including areas where Harbour Energy holds licences.

As well as research, the CDT runs a professionally accredited 20-week training programme for students to develop their understanding of the wider energy-transition landscape.

Since its launch in 2014, the CDT has enrolled 170 PhDs. Eighty have graduated from the GeoNetZero CDT programme to date, all of whom have been employed in a relevant discipline, underlining the relevance, quality and need for the scheme.

### Empowering future generations

#### Educational outreach

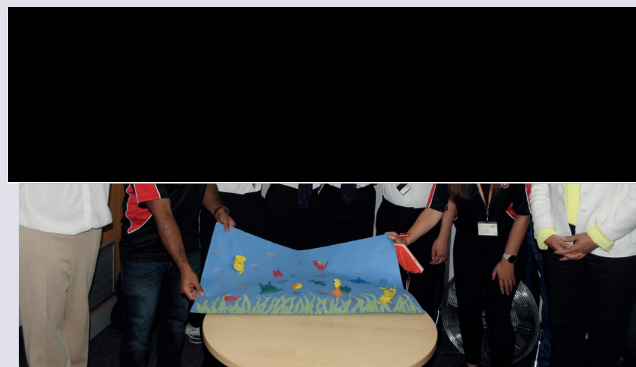
Phillips 66 Limited has a long-standing relationship with the Humber region and completed a wide range of educational outreach programmes in 2022. This forms connections between businesses and education, and seeks to encourage growth of a local skilled workforce.

**Waterline Summit 2022** – Phillips 66 Limited was a partner for this event organised by Marketing Humber and supported by the University of Hull. Bringing together a variety of different stakeholders, including students, academics and businesses, the Summit provided information for students and attracted new investment across the Humber. An Energy of the Future session detailed how Phillips 66 Limited and others plan to support decarbonisation, create jobs and boost the economic profile of the local area.

**Schools Sustainability Challenge<sup>11</sup>** – During 2022, Phillips 66 Limited launched a Sustainability Challenge to involve over 30 local schools on a variety of sustainability issues. Students were asked to recommend solutions for a wide range of sustainability challenges.

#### School and college support

Phillips 66 Limited works with many schools across the Humber region to help form connections between businesses and education by contributing to careers activities and events. As part of its commitment to this, Phillips 66 Limited is a partner to Engineering UTC Northern Lincolnshire<sup>12</sup>, supporting activities such as health and safety talks, one-to-one mentoring, and work placements.



<sup>11</sup> Phillips 66 Limited UTC Engagement, 2022. Available at: <https://www.enlutc.co.uk/partner-profile-phillips-66/>

<sup>12</sup> Phillips 66 Limited, Battery Coke Article, Page, 63, 2022. Available at: <https://www.criticalmineral.org/esgpaper>



## Low-carbon products and inward investment

The successful completion of Viking CCS will enable project members in the Humber and beyond to decarbonise their current and future product lines – shaping the Humber into a low-carbon hub.



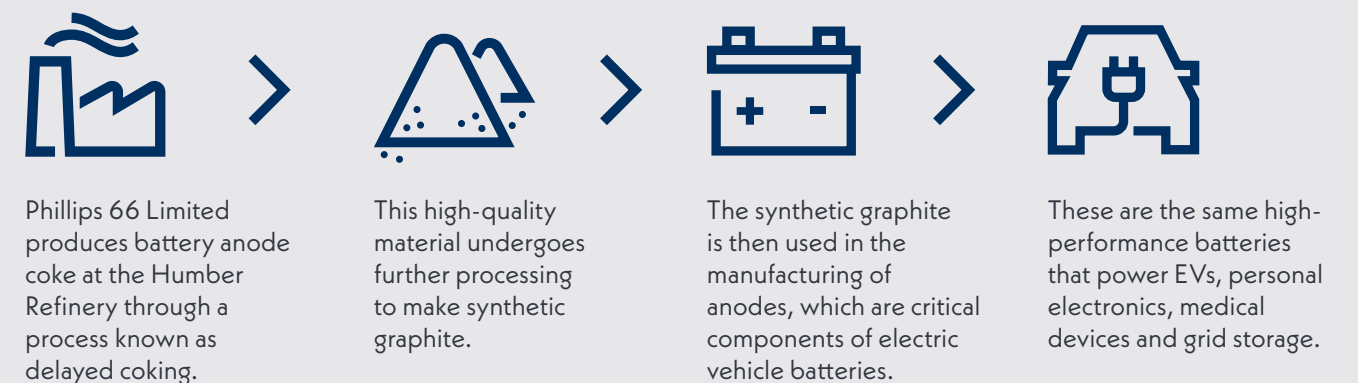
### Phillips 66 Limited: The refinery of the future

Phillips 66 Limited is developing new lower-carbon business streams, enabling the company to transform its business to one that is fit for the future and can contribute to decarbonising other sectors.

#### Supporting the electric vehicle supply chain<sup>12</sup>

Phillips 66 Limited produces one of the essential elements of electric vehicle batteries. The battery anode graphite, produced at the Humber Refinery, forms a key component within electric vehicle batteries and supports advanced manufacturing in the steel-recycling industry. The Humber Refinery is the sole European producer of this critical product.

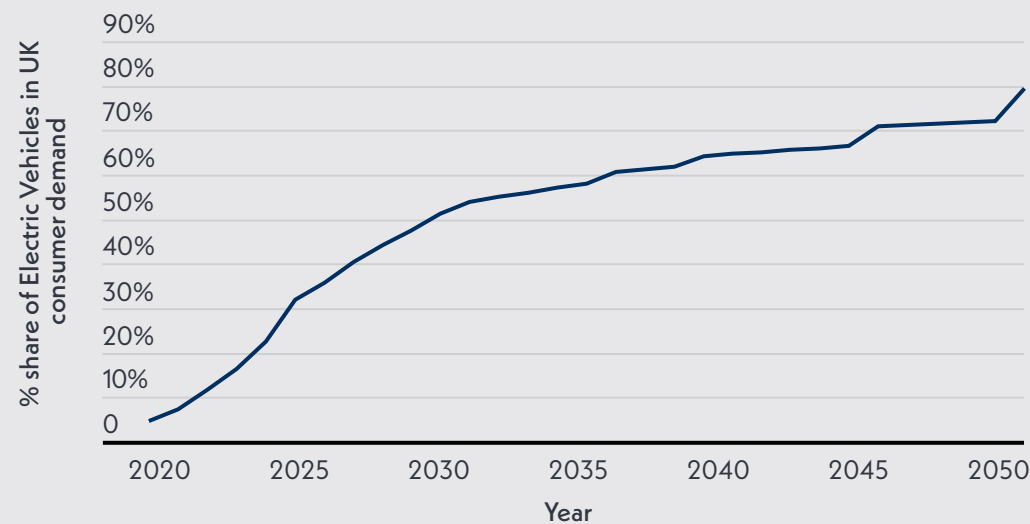
Figure 9: Phillips 66 Limited's role in the electric vehicle supply chain







**Figure 10:** UK projected growth in electric vehicle demand leading to increased battery demand<sup>13</sup>



Electric vehicles are expected to play a critical role in decarbonising transport, leading to a rapid increase in demand for synthetic graphite (Figure 10). CO<sub>2</sub> capture from the production process would reduce Phillips 66 Limited's emissions, lowering the carbon intensity of the electric vehicle supply chain.

Developing the electric vehicle supply chain industry in the Humber will provide economic benefits to the local communities, creating and maintaining local jobs.

### Lower-carbon fuels<sup>14</sup> and sustainable aviation fuels (SAF)<sup>15</sup>

Phillips 66 Limited's Humber Refinery is moving its operations towards developing fuels required for a low-carbon economy.

For example, the Humber Refinery was the first in the UK to produce high-performing, advanced second-generation biofuels at scale, using waste. Used cooking oil was the main waste feedstock introduced to the refinery processes, in 2017. In 2020, Phillips

66 Limited invested significantly in increasing this capacity threefold, with the addition of a new lower-carbon fuel module.

Phillips 66 Limited lower-carbon fuels production also allows the refinery to produce SAF, which is vital to decarbonising the aerospace industry, one of the 'hard to abate' sectors<sup>16</sup>. SAF can play a key role by displacing some fossil-fuel-derived kerosene that emits CO<sub>2</sub>, with a lower-carbon alternative. This can reduce lifecycle CO<sub>2</sub> emissions by over 80% compared to traditional jet fuel.

Currently, the Humber Refinery produces around 20,000 metric tonnes of SAF a year, and it plans to more than double production by 2025.

Phillips 66 Limited has already signed a partnership with British Airways. This will reduce British Airways' lifecycle CO<sub>2</sub> emissions by almost 100,000 tons, the equivalent of powering 700 net zero CO<sub>2</sub> emissions flights between London and New York on its fuel-efficient Boeing 787 aircraft.

<sup>13</sup> Element Energy, Electric Mobility: Inevitable, or Not, 2022. Available at: <http://www.element-energy.co.uk/wp-content/uploads/2017/03/20161024---Towards-a-European-Market-for-Electro-Mobility-FINAL.pdf>

<sup>14</sup> IAG Cargo, Phillips 66 Limited Used Cooking Oil Processing Report, 2022. Available at: <https://iagcargomagazine.com/2022/11/08/phillips-66-leading-the-way-with-sustainable-aviation-fuel/>

<sup>15</sup> Phillips 66 Limited and British Airways Press Release, 2022. Available at: <https://www.phillips66.com/newsroom/british-airways-phillips-66-limited-sign-sustainable-aviation-fuel-supply-agreement/>

<sup>16</sup> A sector in which transition to net zero is complex due to a lack of low carbon technological developments and high costs of transition.

### A low-carbon green energy future at ABP's Port of Immingham

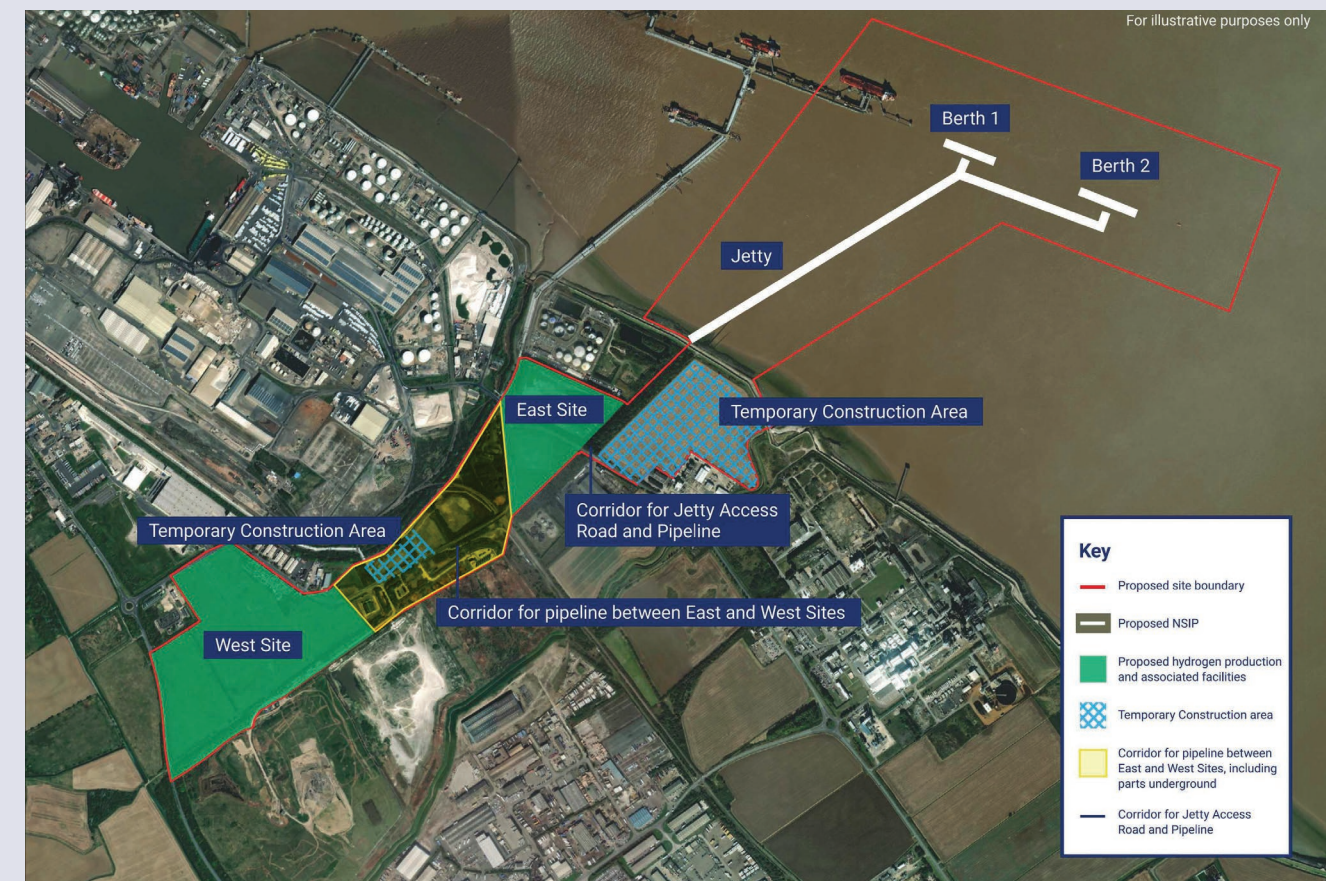
ABP's Humber port complex is the largest in the UK, handling more than 60 million tonnes of trade in 2021, or around £75bn of imports and exports<sup>17</sup>. This critical ports complex contributes £2.5bn of value added to the UK economy, with over 1,200 people directly employed at the port and 34,900 jobs supported across the Humber region<sup>18</sup>.

The ABP Humber port complex already plays a leading role in the UK's energy transition, with the UK's only wind-turbine manufacturing factory, in Hull, and the UK's largest offshore wind operations and maintenance hub at Grimsby. Recognising the scale of economic opportunity that the energy transition and net zero

economy represents, ABP is further investing in growing the Humber port complex's leading role with a new green-energy jetty and associated infrastructure, along with innovation such as a world-first trial for using hydrogen in port equipment.

The new jetty will be in dual use for both the import of green ammonia for conversion to hydrogen, and CO<sub>2</sub> imports. It can enable access to geological CO<sub>2</sub> storage for up to 40% of UK industrial and power emissions in otherwise stranded industrial clusters, via the broader ABP port network including regions such as South Wales and the Solent (see page 6).

**Figure 11:** ABP's green-energy terminal plan with new imports berths and hydrogen production



<sup>17</sup> Department for Transport "Port and domestic waterborne freight statistics" <https://www.gov.uk/government/statistical-data-sets/port-and-domestic-waterborne-freight-statistics-port>

<sup>18</sup> "Serving the economy. Serving the Nation" ABP Economic Impact Report <https://www.abports.co.uk/media/55cfqmyy/abp-economic-impact-study.pdf>



# The potential for growth

We believe the Humber can be the UK's first net zero SuperPlace, combining industrial-scale green energy generation and new CCS infrastructure to enable an industrial renaissance and new energy ecosystem. Viking CCS can deliver a material acceleration to this transition and cement the Humber's position of first UK SuperPlace by 2030.



We welcome the Government's commitment to CO<sub>2</sub> capture and storage as a principal means of accelerating the nation's net zero ambitions.

The UK has the potential to be a global leader in carbon capture and storage, and the Viking CCS project is well-positioned to play a key role. By working in partnership with the power sector and infrastructure and transport providers, Viking CCS offers a route to deliver one third of the UK's target of 30 million tonnes of CO<sub>2</sub> capture by 2030.

I now urge Government to initiate the Track 2 cluster selection process so that the Viking CCS project can remain on track to realise these goals.

**Linda Z. Cook**  
CEO Harbour Energy

The Viking CCS Cluster investment spans the critical transport and storage infrastructure, the CO<sub>2</sub> capture plants of Cluster members, in addition to the opportunity of ABP's port network, and is projected to bring £7 billion of private-sector-led capital investment between 2025 and 2035.

This scale of sustained private-sector investment will generate significant demand for skilled jobs across a broad range of industries, and develop secondary benefits across the region as these new workers seek services in the local economies. Securing these skilled jobs within the UK and regional economies, where there are already supply chain and labour constraints, won't be easy and will require sustained engagement from industry and government to attract talented school leavers and apprentices across the range of sectors needed. This will require collaboration between government, developers, the supply chain, and the education and skills providers. However, with over 10,000 jobs potentially generated by the Viking CCS Cluster, at the peak of construction in 2027, this is a huge opportunity that the Humber and north-east of England is uniquely placed to take, as the future epicentre of the UK's net zero economy.

Access to the CCS infrastructure and growth in the market for lower-carbon products, such as sustainable aviation fuel, the electric vehicle battery supply chain and abated power and steam, can attract other inward investment to a new net zero SuperPlace – as evidenced by RWE's recently announced development partnership with Viking CCS to explore the development of a new-build modern gas-fired power station with carbon capture, on the South Humber bank.

The potential investment in the Viking CCS Cluster, subject to the necessary processes, business model support and final investment decisions, will help secure the UK's energy future, ensuring a fast and material reduction in CO<sub>2</sub> emissions, while stimulating both regional and national growth. With the Viking CCS final investment decision planned for 2024, and first storage as early as 2027, swift action is needed from government to ensure the UK's unique position as a global leader in CCS and the net zero supply chain is not at risk.







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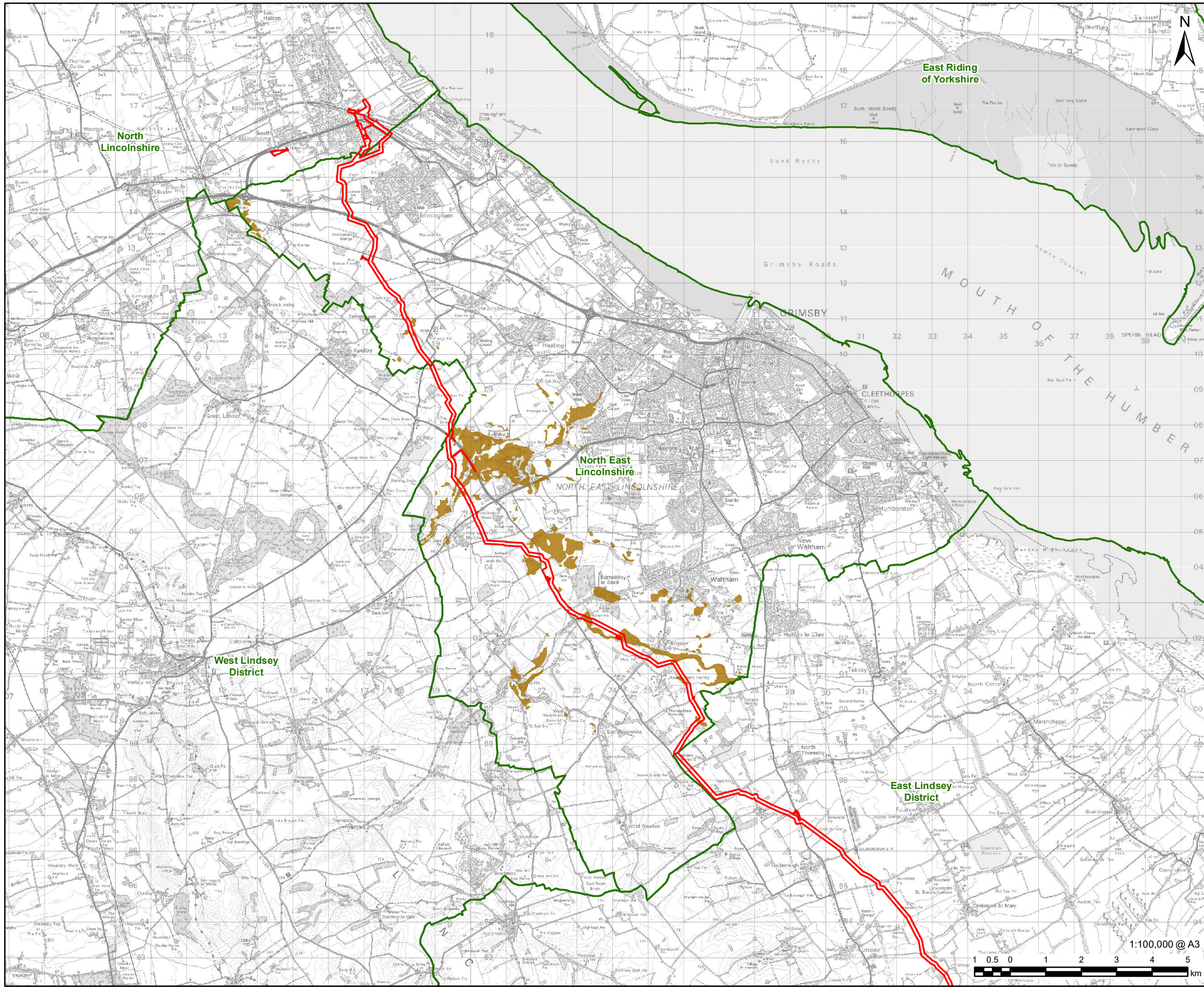
**CATCH**

 **HEY** Hull and  
East Yorkshire  
Local Enterprise  
Partnership

Viking CCS Pipeline

**First Written Questions -  
Appendix H: Supporting  
Information for Written Question  
1.17.6**





**VikingCCS**

**AECOM**

PROJECT  
**Viking CCS Pipeline**

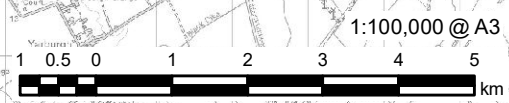
LEGEND

- Draft Order Limits
- Local Authority Boundary
- Mineral Safeguarding Area - Within scheme extent (NELC)

NOTES:  
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**FIGURE TITLE**  
Figure MSA/01  
Mineral Safeguarding Areas in North East Lincolnshire

**ISSUE PURPOSE**  
DCO WRITTEN QUESTIONS  
PROJECT NUMBER / REFERENCE  
60668955 / VCCS\_240411\_DCOQ\_1



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