
Summary of Residual Effects

The Yorkshire and Humber (CCS Cross Country Pipeline) Development Consent Order

*Under Regulation 5(2)(a) of the Infrastructure Planning
(Applications: Prescribed Forms and Procedure)
Regulations 2009*

Environmental Statement Documents

Volume 6: Environmental Statement			
Document Reference	Chapter	Document	Box
6.1	1	Introduction	
6.2	2	Onshore Scheme Development and Alternatives	
6.3	3	Onshore Scheme Description	
6.4	4	EIA Consultation	
6.5	5	EIA Process	
6.6	6	Water Resources and Flood Risk	
6.7	7	Geology, Hydrogeology and Ground Conditions	
6.8	8	Land Use and Agriculture	
6.9	9	Ecology and Nature Conservation	
6.10	10	Archaeology and Cultural Heritage	
6.11	11	Landscape and Visual Amenity	
6.12	12	Air Quality	
6.13	13	Noise and Vibration	
6.14	14	Traffic, Transport and Access	
6.15	15	Socio-Economics Including Recreation and Tourism	
6.16	16	Not Used	
6.17	17	Cumulative Effects Assessment	
6.18	18	Summary of Residual Effects	
6.19	19	Glossary	
6.20	20	Non Technical Summary	
6.21	21	Statement of Combined Effects	

Contents

1	Introduction	1
1.1	Water Resource and Flood Risk (Document 6.6) Summary of Residual Effects	3
1.2	Geology, hydrogeology and Ground Conditions (Document 6.7) Summary of Residual Effects	26
1.3	Land Use and Agriculture (Document 6.8) Summary of Residual Effects	52
1.4	Ecology and Nature Conservation (Document 6.9) Summary of Residual Effects	53
1.5	Archaeology and Cultural Heritage (Document 6.10) Summary of Residual Effects	109
1.6	Landscape and visual assessment (Document 6.11) Summary of Residual effects	111
1.7	Air Quality (Document 6.12) Summary of residual effects	115
1.8	Noise and Vibration (Document 6.13) Summary of residual effects	125
1.9	Traffic Transport and Access (Document 6.14) (based on HGV Peak Week weekday assessment) Summary of residual effects	140
1.10	Socio-economics (Document 6.15) Summary of residual effects	142

1 Introduction

- 1.1.1 This Chapter provides a summary of the residual environmental effects that are likely to result from the implementation of the Onshore Scheme, a description of which is provided in Chapter 3 Onshore Scheme Description (Document 6.3). This summary of Residual Effects draws on the chapters shown in Table 1 below:

Table 1 Technical Chapters of the Environmental Statement (Document 6)		
Document Reference	Chapter of ES	Title
6.6	6	Water Resources and Flood Risk
6.7	7	Geology, Hydrogeology and Ground Conditions
6.8	8	Land Use and Agriculture
6.9	9	Ecology and Nature Conservation
6.10	10	Archaeology and Cultural Heritage
6.11	11	Landscape and Visual Amenity
6.12	12	Air Quality
6.13	13	Noise and Vibration
6.14	14	Traffic, Transport and Access
6.15	15	Socio-Economics Including Recreation and Tourism

- 1.1.2 As explained in Chapter 5 EIA Process (Document 6.5), the residual effects of the Onshore Scheme are those that remain following the application of the committed mitigation and full details of which are included in Section 8 of each of the technical chapters (Documents 6.6 to 6.15) which aim to eliminate or reduce the effects. In particular, the iterative design process has allowed the Onshore Scheme to evolve in response to feedback from consultation, and environmental and technical investigations. Significant effects are those that have a moderate or greater adverse/beneficial effect. Mitigation has primarily been developed to address the potentially

significant effects; however commitments are also made to reduce effects that are considered to be minor or negligible.

- 1.1.3 The Environmental Impact Assessment (EIA) has demonstrated that, wherever possible, environmental effects associated with the construction, operation and decommissioning of the Onshore Scheme have been avoided or minimised. However, there are some residual likely significant effects remaining after the application of committed mitigation, particularly in relation to archaeology and noise (temporary effects during Pipeline construction).
- 1.1.4 Sections 1.1 – 1.10 provide tables summarising the findings of the EIA, and summarises the residual effects, identifying their significance. The specific approach to the assessment of significance is outlined in Chapter 5 EIA Process (Document 6.5) and the specific approach for each technical assessment is described in Section 4 of each of the technical chapters (Documents 6.6 to 6.15). A non technical summary of the findings of the EIA is provided in Document 6.20 Non Technical Summary.

1.1 WATER RESOURCE AND FLOOD RISK (DOCUMENT 6.6) SUMMARY OF RESIDUAL EFFECTS

Summary of Water Resource Residual Effects				
Receptor / Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
Camblesforth Multi-junction Site - Tollingham Block Valve Site (including White Rose CCS Connection)				
River Ouse	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from hydrostatic testing	All testing completed in accordance with relevant consents / permits	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
Carr Dike / Lendall Drain	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)

Summary of Water Resource Residual Effects				
Receptor / Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
	Long term effects from pollutants contained in heightened surface water runoff from Drax PIG Trap	Appropriate surface water drainage system (to ground) to be installed, utilising SUDS where possible.	Neutral (Not significant)	Neutral (Not significant)
Willow Row Drain	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
River Foulness	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)

Summary of Water Resource Residual Effects				
Receptor / Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
DX 4/1 / DX 7/3, Lowfield Drain, Fields Drain, PDX 1, DX 8/8, Asselby Marsh Drain, New Drain, Black Dyke, drain north of North Howden, drain northeast of North Howden, DX 13/3, DX 13/4, DX 14/1, drain south of Skiff Farm	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to open cut crossings)	Reinstatement of channel and bed	Minor Adverse (Not significant)	Minor Adverse (Not significant)

Summary of Water Resource Residual Effects				
Receptor / Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
Field drain on western boundary / south of Skiff Farm (Tollingham Block Valve TCA)	Long term effects from pollutants contained in heightened surface water runoff from Tollingham Block Valve	Appropriate surface water drainage system (to ground) to be installed, utilising SUDS where possible.	Neutral (Not significant)	Neutral (Not significant)
Other minor field drains / watercourses	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)

Summary of Water Resource Residual Effects				
Receptor / Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to open cut crossings)	Reinstatement of channel and bed	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
Field drain on western and southern boundary (Drax PIG Trap) Field drain on southern and eastern boundary (Drax PIG Trap TCA) Field drain on eastern boundary (Camblesforth Multi-junction) Field drain on southern and western boundary (Camblesforth Multi-junction TCA) Thorlam Drain on eastern boundary (Tollingham Block Valve)	Long term effects from pollutants contained in heightened surface water runoff from AGI sites	Appropriate surface water drainage system (to ground) to be installed, utilising SUDS where possible.	Neutral (Not significant)	Neutral (Not significant)
Tollingham Block Valve Site to Dalton Block Valve Site				
Market Weighton	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)

Summary of Water Resource Residual Effects				
Receptor / Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
DX 16/1, DX 17/1, DX 17/3, Back Delfin	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to open cut crossings)	Reinstatement of channel and bed	Minor adverse (Not significant)	Minor adverse (Not significant)
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
Other minor field drains / watercourses	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with	Neutral (Not significant)	Neutral (Not significant)

Summary of Water Resource Residual Effects				
Receptor / Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		relevant permits in place.		
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to open cut crossings)	Reinstatement of channel and bed	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
Dalton Block Valve Site to Skerne Block Valve Site				
Bracken Beck	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
Northfield Beck	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate	Welfare facilities maintained and emptied / disposed of	Neutral	Neutral

Summary of Water Resource Residual Effects				
Receptor / Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	disposal of foul water from the construction site	by specialist contractor	(Not significant)	(Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
Knorka Dike	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to open cut crossings)	Reinstatement of channel and bed	Minor adverse (Not significant)	Minor adverse (Not significant)
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
Other minor field drains / watercourses	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from re-routeing and	Good practice mitigation measures in place.	Neutral	Neutral

Summary of Water Resource Residual Effects				
Receptor / Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	reinstating agricultural drainage	Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	(Not significant)	(Not significant)
	Long term morphological effects (associated to open cut crossings)	Reinstatement of channel and bed	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
Gypsy Race	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
Field drains north and east of site (Skerne Block Valve and TCA)	Long term effects from pollutants contained in heightened surface water runoff from Skerne Block Valve	Appropriate surface water drainage system (to ground) to be installed, utilising SUDS where possible.	Neutral (Not significant)	Neutral (Not significant)
Skerne Block Valve Site - Barmston Pumping Station (including Barmston Pumping Station to MLWS)				
Main Drain	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Change in water levels as a result of dewatering	Watercourse water levels monitored and dewatered waters replaced if necessary at an appropriate rate.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place.	Neutral (Not significant)	Neutral (Not significant)

Summary of Water Resource Residual Effects				
Receptor / Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		Like for like structures used. Pre-fabricated structures used where possible.		
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
River Hull	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Change in water levels as a result of dewatering	Watercourse water levels monitored and dewatered waters replaced if necessary at an appropriate rate.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
Driffield Canal	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated	Environmentally sensitive design used.	Neutral	Neutral

Summary of Water Resource Residual Effects				
Receptor / Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	to drainage reinstatement)		(Not significant)	(Not significant)
Nafferton Highland Stream	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
White Dike	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
Kelk Beck	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages /	Pollution Prevention and Control Plan	Neutral	Neutral

Summary of Water Resource Residual Effects				
Receptor / Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	leaks		(Not significant)	(Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
Gransmoor Drain	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
DX 37/6, drain east of White Dike, DX 39/1, Burton Drain, drain north of Hamiltonhill Farm, DX 39/3a (drain south of Sands Road), drain west of Watermill Grounds and drain north of Watermill Grounds	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate	Welfare facilities maintained and emptied / disposed of	Neutral	Neutral

Summary of Water Resource Residual Effects				
Receptor / Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	disposal of foul water from the construction site	by specialist contractor	(Not significant)	(Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to open cut crossings)	Reinstatement of channel and bed	Minor adverse (Not significant)	Minor adverse (Not significant)
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
Earl's Dyke	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Long term effects from pollutants contained in heightened surface water runoff from Barmston Pumping Station.	Appropriate surface water drainage system (to ground) to be installed, utilising SUDS where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term effects from leaks from Barmston Pumping Station site welfare facilities	Appropriate on-site treatment to be provided.	Neutral (Not significant)	Neutral (Not significant)
	Long term effects from spills or leaks of chemicals / oils stored on site	Additional pre-treatment system to be provided. Oil containing equipment will be located on concrete bunds filled with aggregates and with a sump to filter any oil before the water drains to the surface water system.	Neutral (Not significant)	Neutral (Not significant)
Other minor field drains / watercourses	Temporary effects from silt laden runoff and dewatering arising (if entering watercourses untreated)	Water Management Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillages / leaks	Pollution Prevention and Control Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from water pollution due to the use of herbicides	Only use herbicides that easily breakdown in soil. Work carried out following relevant guidelines and with relevant permits in place.	Neutral (Not significant)	Neutral (Not significant)

Summary of Water Resource Residual Effects				
Receptor / Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	Temporary effects from inappropriate disposal of foul water from the construction site	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from re-routeing and reinstating agricultural drainage	Good practice mitigation measures in place. Appropriate location selected and relevant consents in place. Like for like structures used. Pre-fabricated structures used where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to open cut crossings)	Reinstatement of channel and bed	Neutral (Not significant)	Neutral (Not significant)
	Long term morphological effects (associated to drainage reinstatement)	Environmentally sensitive design used.	Neutral (Not significant)	Neutral (Not significant)
Field drain in centre of Barmston Pumping Station site / DX 39/3a (south to north) (drain south of Sands Road), field drain on southern boundary of Barmston Pumping Station site (drain north of Hamiltonhill Farm)	Long term effects from pollutants contained in heightened surface water runoff from Barmston Pumping Station	Appropriate surface water drainage system (to ground) to be installed, utilising SUDS where possible.	Neutral (Not significant)	Neutral (Not significant)
	Long term effects from leaks from Barmston Pumping Station site welfare facilities	Appropriate on-site treatment to be provided.	Neutral (Not significant)	Neutral (Not significant)
	Long term effects from spills or leaks of chemicals / oils stored on site	Additional pre-treatment system to be provided. Oil containing equipment will be located on concrete bunds filled with aggregates and with a sump to filter any oil before the water drains to the surface water system.	Neutral (Not significant)	Neutral (Not significant)
Field drain in centre (south to north) of Barmston Pumping Station site / DX 39/3a (drain south of Sands Road)	Long term effect from drain maintenance and enhancement.	NA	Minor (Beneficial)	Minor (Beneficial)
South Yorkshire and Lincolnshire coastal water body	Temporary effects from silt-laden runoff	Marine Pollution Contingency Plan	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from chemical spillage	Chemical Risk Analysis	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from inappropriate disposal of foul waste water	Welfare facilities maintained and emptied / disposed of by specialist contractor	Neutral (Not significant)	Neutral (Not significant)
	Temporary effects from scour / sediment trapping	Mitigation applied through design: landfall design and Pipeline installation methods (i.e. non-open cut methods). Material to be moved downdrift of the cofferdam if there was substantial sediment trapping	Neutral (Not significant)	Neutral (Not significant)

Summary of Flood Risk Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
Camblesforth Multi-junction Site - Tollingham Block Valve Site (including White Rose CCS Connection)				
People, Property, infrastructure and Ecosystems	Fluvial Flooding Temporary Adverse Effect	<p>If working in an area shown to be at risk of flooding on the EA maps, the risk will be considered at an appropriate level within the risk assessments and management plans for the construction site. Appropriate emergency evacuation procedures will be put in place to be implemented in the event of a flood occurring.</p> <p>If working in an EA Flood Alert/Flood Warning Area then National Grid will sign up to the free service and implement this into evacuation plans.</p>	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Fluvial Flooding Permanent Adverse Effect	<p>If working in an area shown to be at risk of flooding on the EA maps, the risk will be considered at an appropriate level within the risk assessments and management plans for the operational site. Appropriate emergency evacuation procedures will be put in place to be implemented in the event of a flood occurring.</p> <p>If working in an EA Flood Alert/Flood Warning Area then National Grid will sign up to the free service and implement this into evacuation plans.</p> <p>All critical infrastructure will be raised at least 1 m above local ground levels for Drax PIG Trap and Camblesforth Multi-junction. Critical infrastructure will be raised 0.3m above local ground levels. Infrastructure raising will occur within instrument buildings.</p>	Minor Permanent Adverse (Not significant)	Minor Permanent Adverse (Not significant)

Summary of Flood Risk Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	Flooding from Crossing Flood Defences on the River Ouse Temporary Adverse Effect	A non open-cut method will be used to cross the River Ouse which will not interfere with the flood defences. This method of crossing will reduce the risk of causing flooding to any area upstream, downstream or surrounding the crossing.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Land Drain Flooding Temporary Adverse Effect	Debris and other material will be prevented from entering temporary or permanent drainage systems, including land drains, through appropriate site management, to ensure that the systems remain operational. All land drains will be re-instated during construction.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Land Drain Flooding Permanent Adverse Effect	Debris and other material will be prevented from entering temporary or permanent drainage systems, including land drains, through appropriate site management, to ensure that the systems remain operational.	Minor Permanent Adverse (Not significant)	Minor Permanent Adverse (Not significant)
	Flooding from Artificial Water Bodies Temporary Adverse Effect	Reservoir flooding is extremely unlikely as they must be regularly inspected and maintained. The speed and onset of flooding would also be expected to be slow due to the distance from the reservoirs to the sites. Therefore it is deemed that measures discussed with respect to fluvial and/or pluvial flooding will provide effective mitigation for the flood risk from artificial sources.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)

Summary of Flood Risk Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	Flooding from Artificial Water Bodies Permanent Adverse Effect	Reservoir flooding is extremely unlikely as they must be regularly inspected and maintained. The speed and onset of flooding would also be expected to be slow due to the distance from the reservoirs to the sites. Therefore it is deemed that measures discussed with respect to fluvial and/or pluvial flooding will provide effective mitigation for the flood risk from artificial sources	Minor Permanent Adverse (Not significant)	Minor Permanent Adverse (Not significant)
	Pluvial Flooding Temporary Adverse Effect	A temporary surface water drainage system will be installed to manage the surface water runoff from the site.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Pluvial Flooding Permanent Adverse Effect	An increase in the risk of pluvial flooding, as a result of increased impermeable areas, will be mitigated by a detailed drainage design which will be designed at a later stage, which will propose draining to ground and provide attenuation requirements. The DCO includes the Requirement for a post DCO submission of a detailed drainage design which will include provision for attenuation measures and interceptors.	Minor Permanent Adverse (Not significant)	Minor Permanent Adverse (Not significant)
	Loss of Floodplain Storage Temporary Adverse Effect	Storage of materials or spoil within the flood plain will be avoided if possible. Where it is considered necessary to store material in the flood plain, the requirements for mitigation should be agreed in full with the EA before construction commences.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Loss of Floodplain Storage Permanent Adverse Effect	Storage of materials or spoil within the flood plain will be avoided if possible. There will be no ground raising on site, only raising of critical infrastructure within instrument buildings.	Minor Permanent Adverse (Not significant)	Minor Permanent Adverse (Not significant)
	Flooding from Sewers and Mains Temporary Adverse Effect	Public sewers and water mains have been identified via liaison with utility companies. This information, will be consulted during construction. The Construction process should not impact on existing water mains and sewers.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Watercourse crossing Temporary Adverse Effect	The method of crossing Rivers and Ordinary Watercourses (including land drains) shall be undertaken in a manner which will not cause an increase in flood risk to any area upstream, downstream or surrounding the crossing. All Main Rivers and WFD watercourses (except Bracken Beck) will be crossed with non open cut methods.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)

Summary of Flood Risk Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
Tollingham Block Valve Site to Dalton Block Valve Site				
People, Property, infrastructure and Ecosystems	Fluvial Flooding Temporary Adverse Effect	If working in an area shown to be at risk of flooding on the EA maps, the risk will be considered at an appropriate level within the risk assessments and management plans for the construction site. Appropriate emergency evacuation procedures will be put in place to be implemented in the event of a flood occurring. If working in an EA Flood Alert/Flood Warning Area then National Grid will sign up to the free service.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Fluvial Flooding Permanent Adverse Effect	If working in an area shown to be at risk of flooding on the EA maps, the risk will be considered at an appropriate level within the risk assessments and management plans for the operational site. Appropriate emergency evacuation procedures will be put in place to be implemented in the event of a flood occurring. If working in an EA Flood Alert/Flood Warning Area then National Grid will sign up to the free service. All critical infrastructure will be raised 0.3m above local ground levels. Infrastructure raising will occur within instrument buildings.	Minor Permanent Adverse (Not significant)	Minor Permanent Adverse (Not significant)
	Land Drain Flooding Temporary Adverse Effect	Debris and other material will be prevented from entering temporary or permanent drainage systems, including land drains, through appropriate site management, to ensure that the systems remain operational. All land drains will be re-instated during construction.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Flooding from Artificial Water Bodies Temporary Adverse Effect	Reservoir flooding is extremely unlikely as they must be regularly inspected and maintained. The speed and onset of flooding would also be expected to be slow due to the distance from the reservoirs to the sites. Therefore it is deemed that measures discussed with respect to fluvial and/or pluvial flooding will provide effective mitigation for the flood risk from artificial sources	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Flooding from Artificial Water Bodies	Reservoir flooding is extremely unlikely as they must be regularly inspected and maintained. The speed and	Minor Permanent Adverse (Not significant)	Minor Permanent Adverse

Summary of Flood Risk Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	Permanent Adverse Effect	onset of flooding would also be expected to be slow due to the distance from the reservoirs to the sites. Therefore it is deemed that measures discussed with respect to fluvial and/or pluvial flooding will provide effective mitigation for the flood risk from artificial sources		(Not significant)
	Pluvial Flooding Temporary Adverse Effect	A temporary surface water drainage system will be installed to manage the surface water runoff from the site.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Pluvial Flooding Permanent Adverse Effect	An increase in the risk of pluvial flooding, as a result of increased impermeable areas, will be mitigated by a detailed drainage design which will be designed at a later stage, which will propose draining to ground and provide attenuation requirements. The DCO includes the Requirement for a post DCO submission of a detailed drainage design which will include provision for attenuation measures and interceptors.	Minor Permanent Adverse (Not significant)	Minor Permanent Adverse (Not significant)
	Loss of Floodplain Storage Temporary Adverse Effect	Storage of materials or spoil within the flood plain will be avoided if possible. Where it is considered necessary to store material in the flood plain, the requirements for mitigation should be agreed in full with the EA before construction commences.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Loss of Floodplain Storage Permanent Adverse Effect	Storage of materials or spoil within the flood plain will be avoided if possible. There will be no ground raising on site, only raising of critical infrastructure within instrument buildings.	Minor Permanent Adverse (Not significant)	Minor Permanent Adverse (Not significant)
	Flooding from Sewers and Mains Temporary Adverse Effect	Public sewers and water mains have been identified via liaison with utility companies. This information, will be consulted during construction. The Construction process should not impact on existing water mains and sewers.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Watercourse crossing Temporary Adverse Effect	The method of crossing Rivers and Ordinary Watercourses (including land drains) shall be undertaken in a manner which will not cause an increase in flood risk to any area upstream, downstream or surrounding the crossing. All Main Rivers and WFD watercourses (except Bracken Beck) will be crossed with non open cut methods.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
Dalton Block Valve to Skerne Block Valve				
People, Property, infrastructure	Fluvial Flooding	If working in an area shown to be at risk of flooding on	Minor Temporary Adverse	Minor Temporary

Summary of Flood Risk Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
and Ecosystems	Temporary Adverse Effect	the EA maps, the risk will be considered at an appropriate level within the risk assessments and management plans for the construction site. Appropriate emergency evacuation procedures will be put in place to be implemented in the event of a flood occurring. If working in an EA Flood Alert/Flood Warning Area then National Grid will sign up to the free service.	(Not significant)	Adverse (Not significant)
	Fluvial Flooding Permanent Adverse Effect	If working in an area shown to be at risk of flooding on the EA maps, the risk will be considered at an appropriate level within the risk assessments and management plans for the operational site. Appropriate emergency evacuation procedures will be put in place to be implemented in the event of a flood occurring. If working in an EA Flood Alert/Flood Warning Area then National Grid will sign up to the free service.	Minor Permanent Adverse (Not significant)	Minor Permanent Adverse (Not significant)
	Flooding from Crossing Flood Defences on White Dyke and Kelk Beck Temporary Adverse Effect	A non open-cut method will be used to cross White Dyke and Kelk Beck which will not interfere with the flood defences. This method of crossing will reduce the risk of causing flooding to any area upstream, downstream or surrounding the crossing.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Land Drain Flooding Temporary Adverse Effect	Debris and other material will be prevented from entering temporary or permanent drainage systems, including land drains, through appropriate site management, to ensure that the systems remain operational. All land drains will be re-instated during construction.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Land Drain Flooding Permanent Adverse Effect	Debris and other material will be prevented from entering temporary or permanent drainage systems, including land drains, through appropriate site management, to ensure that the systems remain operational.	Minor Permanent Adverse (Not significant)	Minor Permanent Adverse (Not significant)
	Pluvial Flooding Temporary Adverse Effect	A temporary surface water drainage system will be installed to manage the surface water runoff from the site.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Pluvial Flooding Permanent	An increase in the risk of pluvial flooding, as a result of increased impermeable areas, will be mitigated by a detailed drainage design which will be designed at a	Minor Permanent Adverse (Not significant)	Minor Permanent Adverse (Not significant)

Summary of Flood Risk Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	Adverse Effect	later stage, which will propose draining to ground and provide attenuation requirements. The DCO includes the Requirement for a post DCO submission of a detailed drainage design which will include provision for attenuation measures and interceptors.		
	Loss of Floodplain Storage Temporary Adverse Effect	Storage of materials or spoil within the flood plain will be avoided if possible. Where it is considered necessary to store material in the flood plain, the requirements for mitigation should be agreed in full with the EA before construction commences.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Flooding from Sewers and Mains Temporary Adverse Effect	Public sewers and water mains have been identified via liaison with utility companies. This information will be consulted during construction. The Construction process should not impact on existing water mains and sewers.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Groundwater Flooding Temporary Adverse Effect	De-watering of excavations may be required to mitigate potential inundation with groundwater. De-watering will be undertaken in a manner which cannot cause an increase in flood risk by its disposal and may include discharging to a suitable area of land or to a watercourse. Any dewatering of excavations will be agreed with the relevant authority.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Groundwater Flooding Permanent Adverse Effect	All critical infrastructure will be raised 0.3m above local ground levels. Infrastructure raising will occur within instrument buildings	Minor Permanent Adverse (Not significant)	Minor Permanent Adverse (Not significant)
	Watercourse crossing Temporary Adverse Effect	The method of crossing Rivers and Ordinary Watercourses (including land drains) shall be undertaken in a manner which will not cause an increase in flood risk to any area upstream, downstream or surrounding the crossing. All Main Rivers and WFD watercourses (except Bracken Beck) will be crossed with non open cut methods.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
Skerne Block Valve Site - Barmston Pumping Station (including Barmston Pumping Station to MLWS)				
People, Property, infrastructure and Ecosystems	Fluvial Flooding Temporary Adverse Effect	If working in an area shown to be at risk of flooding on the EA maps, the risk will be considered at an appropriate level within the risk assessments and management plans for the construction site. Appropriate emergency evacuation procedures will be put in place to be implemented in the event of a flood occurring. If working in an EA Flood Alert/Flood Warning Area then	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)

Summary of Flood Risk Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		National Grid will sign up to the free service and implement this into evacuation plans.		
	Fluvial Flooding Permanent Adverse Effect	If working in an area shown to be at risk of flooding on the EA maps, the risk will be considered at an appropriate level within the risk assessments and management plans for the operational site. Appropriate emergency evacuation procedures will be put in place to be implemented in the event of a flood occurring. If working in an EA Flood Alert/Flood Warning Area then National Grid will sign up to the free service and implement this into evacuation plans	Minor Permanent Adverse (Not significant)	Minor Permanent Adverse (Not significant)
	Land Drain Flooding Temporary Adverse Effect	Debris and other material will be prevented from entering temporary or permanent drainage systems, including land drains, through appropriate site management, to ensure that the systems remain operational. All land drains will be re-instated during construction.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Land Drain Flooding Permanent Adverse Effect	Debris and other material will be prevented from entering temporary or permanent drainage systems, including land drains, through appropriate site management, to ensure that the systems remain operational.	Minor Permanent Adverse (Not significant)	Minor Permanent Adverse (Not significant)
	Pluvial Flooding Temporary Adverse Effect	A temporary surface water drainage system will be installed to manage the surface water runoff from the site.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Pluvial Flooding Permanent Adverse Effect	Critical infrastructure will be raised at least 0.3 m above local ground levels within the instrument building to protect against surface water flooding. A drainage strategy has been produced for the site (see Ref 5.2), indicating attenuation and storage requirements which will be required to maintain the existing Greenfield runoff	Minor Permanent Adverse (Not significant)	Minor Permanent Adverse (Not significant)
	Flooding from Sewers and Mains Temporary Adverse Effect	Public sewers and water mains have been identified via liaison with utility companies. This information will be consulted during construction. The Construction process should not impact on existing water mains and sewers.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)
	Groundwater Flooding	De-watering of excavations may be required to mitigate	Minor Temporary Adverse	Minor Temporary

Summary of Flood Risk Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	Temporary Adverse Effect	<p>potential inundation with groundwater. De-watering will be undertaken in a manner which cannot cause an increase in flood risk by its disposal and may include discharging to a suitable area of land or to a watercourse. Any dewatering of excavations will be agreed with the relevant authority.</p> <p>De-watering for the construction of the Pipeline underneath Main Drain, River Hull and the Driffield Canal will be mitigated by providing approximately 14,500m² of land for de-watering lagoons.</p>	(Not significant)	Adverse (Not significant)
	Watercourse crossing Temporary Adverse Effect	The method of crossing Rivers and Ordinary Watercourses (including land drains) shall be undertaken in a manner which will not cause an increase in flood risk to any area upstream, downstream or surrounding the crossing. All Main Rivers and WFD watercourses (except Bracken Beck) will be crossed with non open cut methods.	Minor Temporary Adverse (Not significant)	Minor Temporary Adverse (Not significant)

1.2 GEOLOGY, HYDROGEOLOGY AND GROUND CONDITIONS (DOCUMENT 6.7) SUMMARY OF RESIDUAL EFFECTS

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
Pipeline Envelope				
Geology and soils underlying the Pipeline Envelope	Chemical spillages and leaks to ground from plant and machinery, and from chemicals and other contaminants stored on site.	The storage and use of fuel and oils on site would be in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001	Neutral – Not significant	Neutral – Not significant
	Ground pollution due to the use of herbicides during site clearance.	Use of herbicides would be undertaken in accordance with relevant guidelines. Herbicide use will be limited to glyphosate, which is unlikely to have any long term effects, due to it breaking down readily in upper soil layers.	Neutral – Not significant	Neutral – Not significant
	Disturbance of potentially contaminated soils posing a potential risk to soils and geology.	All vehicles leaving the site would go through a wheel wash to prevent spreading of contamination onto off-site roads. Furthermore, vehicles carrying contaminated soils off-site would only to be loaded up to appropriate levels and be covered to prevent conditioned sediments dropping onto roads; Where piled foundations are used they would be designed in accordance with the Environment Agency guidance document ‘Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention’; and Containment barriers to prevent contaminants that may migrate along the Pipeline to uncontaminated soils or Controlled Waters.	Neutral – Not significant	Neutral – Not significant
	Import of construction materials	Any material imported to site, such as stone for pipe bedding, would be natural quarried stone or if recycled material would undergo chemical testing. The suite of contaminants site use criteria would be agreed with regulatory authorities, in order to demonstrate that the material is suitable for use on site and does pose a risk	Neutral – Not significant	Neutral – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		to human health or the environment.		
	Changes in soil structure and reduction of soil quality due to compaction or erosion during storage.	<p>Soils would only be handled in suitable conditions when they are not excessively wet to prevent loss of structure and fertility;</p> <p>Topsoil storage bunds would be restricted to a maximum height of 3 m to minimise risk of compaction and development of adverse conditions within the topsoil heap that may affect structure and fertility;</p> <p>Soil would be stripped using appropriate machinery (to prevent compaction) and stored in bunds adjacent to the area stripped to ensure the soil is returned to the same area during reinstatement;</p> <p>Protective bog mats or temporary roads would be used where required to prevent compaction of subsoil from construction traffic in soft or wet ground;</p> <p>Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement; and,</p> <p>Storage of excavated material in clearly defined areas to prevent mixing of topsoil and subsoil during construction</p>	Neutral – Not significant	Neutral – Not significant
	Compaction of subsoil due to construction vehicle movements degrading soil quality and causing potential water logging.	<p>Protective bog mats or temporary roads would be used where required to prevent compaction of subsoil from construction traffic in soft or wet ground;</p> <p>Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement,</p>	Neutral – Not significant	Neutral – Not significant
	Requirement for dewatering, reducing flow to groundwater abstractions and surface water bodies, and changes to soil hydrology.	<p>Consideration of the potential effects would be undertaken where dewatering is required during both construction and decommissioning. Groundwater monitoring boreholes are currently being monitored to account for seasonal variation in groundwater levels. Following completion of monitoring and prior to construction the groundwater regime, and need for dewatering, would be determined. Mitigation measures</p>	Minor adverse – Not significant	Minor adverse – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		to control groundwater would potentially include sheet piling around excavations, and controlled discharge to surface waters or soakaways. The measures would be in agreement with the Environment Agency and with the licence holders of groundwater abstractions where the Onshore Scheme is located within a Source Protection Zone.		
	Disturbance of potentially contaminated soils posing a potential risk to the health of construction workers.	<p>Risk assessments in accordance with the Health and Safety at Work Act to restrict exposure to potentially harmful substances to a safe level for construction workers. CDM practices would be applied;</p> <p>Dust suppression measures to prevent against excessive dust generation, for example impermeable covers spread over mounds of bare soil and wetting of bare soil during dry conditions. Implementation of these simple measures can reduce the effects to construction workers and adjacent site users from potentially contaminated dusts;</p> <p>All vehicles leaving the site would go through a wheel wash to prevent spreading of contamination onto off-site roads. Vehicles carrying contaminated soils off-site would only to be loaded up to appropriate levels and be covered to prevent conditioned sediments dropping onto roads;</p> <p>Containment barriers to prevent contaminants that may migrate along the Pipeline to uncontaminated soils.</p>	Neutral – Not significant	Neutral – Not significant
	Direct disturbance of geologically important sites.	Pipeline is routed around the sensitive features of the RIGS.	Minor Adverse – Not significant	Minor Adverse – Not significant
Groundwater	Chemical spillages and leaks to ground and groundwater from plant and machinery, and from chemicals and other contaminants	The storage and use of fuel and oils on site would also be in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001	Minor adverse – Not significant	Minor adverse – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	stored on site.			
	Groundwater pollution due to the use of herbicides during site works.	Use of herbicides would be undertaken in accordance with relevant guidelines. Herbicide use will be limited to glyphosate, which is unlikely to have any long term effects, due to it breaking down readily in upper soil layers.	Minor adverse – Not significant	Minor adverse – Not significant
	Compaction of subsoil due to construction vehicle movements degrading soil quality and causing potential water logging.	Protective bog mats or temporary roads would be used where required to prevent compaction of subsoil from construction traffic in soft or wet ground; Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement,	Neutral – Not significant	Neutral – Not significant
	Import of building materials causing contamination of groundwater.	Any material imported to site, such as stone for pipe bedding, would be natural quarried stone or if recycled material would undergo chemical testing. The suite of contaminants site use criteria would be agreed with regulatory authorities, in order to demonstrate that the material is suitable for use on site and does pose a risk to human health or the environment.	Minor adverse – Not significant	Minor adverse – Not significant
	Disturbance of potentially contaminated soils posing a potential risk to groundwater.	All vehicles leaving the site would go through a wheel wash to prevent spreading of contamination onto off-site roads. Furthermore, vehicles carrying contaminated soils off-site would only to be loaded up to appropriate levels and be covered to prevent conditioned sediments dropping onto roads; Where piled foundations are used they would be designed in accordance with the Environment Agency guidance document 'Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention'; and Containment barriers to prevent contaminants that may migrate along the Pipeline to uncontaminated soils or Controlled Waters.	Minor adverse – Not significant	Minor adverse – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	Requirement for dewatering, reducing flow to groundwater abstractions and surface water bodies, and changes to soil hydrology.	<p>Consideration of the potential effects would be undertaken where dewatering is required during both construction and decommissioning. Groundwater monitoring boreholes are currently being monitored to account for seasonal variation in groundwater levels. Following completion of monitoring and prior to construction the groundwater regime, and need for dewatering, would be determined. Mitigation measures to control groundwater would potentially include sheet piling around excavations, and controlled discharge to surface waters or soakaways. The measures would be in agreement with the Environment Agency and with the licence holders of groundwater abstractions where the Onshore Scheme is located within a Source Protection Zone.</p> <p>At the crossing of the River Hull and the Driffield Canal monitoring water levels within Main Drain and River Hull/ West Beck prior to dewatering to determine baseline levels. During dewatering the water levels would be monitored, and if required maintained in agreement with the Environment Agency. This would be for example by discharge of groundwater from the abstraction process into Main Drain via a series of settlement lagoons.</p>	Minor adverse – Not significant	Minor adverse – Not significant
Intertidal substrates	A ~6m wide cofferdam will extend up to ~70m below MLWS. Intertidal substrates will be temporarily excavated to a depth of 3m within the cofferdam and reception pit, equating to around 5100m ³ of intertidal substrate.	<p>Where possible landfall will be made using a HDD techniques from the launch pit to below MLWS to avoid any effects on intertidal substrates.</p> <p>Assuming the cofferdam scenario is required, material from within the cofferdam will be stored on the upper shore, above the splashzone where possible to avoid losses of material during high tides. Sand and till material will be stored separately. On completion of the landfall work the till material will be replaced first and consolidated where necessary using a vibroroller. The veneer of sand will then be returned, the piles removed,</p>	Neutral – Not significant	Neutral – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		and the site fully restored.		
Intertidal physical processes	The presence of a cofferdam which extends up to ~70m below MLWS has the potential to temporarily interrupt longshore sediment movements for around 6 months, which are typically from north to south.	A weekly inspection of the cofferdam will be undertaken and if it is apparent that there is a build up of sediment on the northern edge, action will be taken to remove the sediment using a backhoe and dumper, for deposit on the southern side of the cofferdam.	Neutral – Not significant	Neutral – Not significant
Drax PIG Trap				
Geology underlying Drax PIG Trap site	Chemical spillages and leaks to ground and groundwater from plant and machinery, and from chemicals and other contaminants stored on site.	The storage and use of fuel and oils on site would also be in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001	Neutral – Not significant	Neutral – Not significant
	Ground pollution due to the use of herbicides during site works.	Use of herbicides would be undertaken in accordance with relevant guidelines. Herbicide use will be limited to glyphosate, which is unlikely to have any long term effects, due to it breaking down readily in upper soil layers.	Neutral – Not significant	Neutral – Not significant
	Import of Building materials	Any material imported to site, such as stone for pipe bedding, would be natural quarried stone or if recycled material would undergo chemical testing. The suite of contaminants site use criteria would be agreed with regulatory authorities, in order to demonstrate that the material is suitable for use on site and does pose a risk to human health or the environment.	Neutral – Not significant	Neutral – Not significant
	Changes in soil structure and reduction of soil quality due to compaction or erosion during storage.	Soils would only be handled in suitable conditions when they are not excessively wet to prevent loss of structure and fertility; Topsoil storage bunds would be restricted to a maximum height of 3 m to minimise risk of compaction and development of adverse conditions within the topsoil heap that may affect structure and fertility;	Neutral – Not significant	Neutral – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		<p>Soil would be stripped using appropriate machinery (to prevent compaction) and stored in bunds adjacent to the area stripped to ensure the soil is returned to the same area during reinstatement;</p> <p>Protective bog mats or temporary roads would be used where required to prevent compaction of subsoil from construction traffic in soft or wet ground;</p> <p>Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement; and,</p> <p>Storage of excavated material in clearly defined areas to prevent mixing of topsoil and subsoil during construction</p>		
	Compaction of subsoil due to construction vehicle movements degrading soil quality and causing potential water logging.	<p>Protective bog mats or temporary roads would be used where required to prevent compaction of subsoil from construction traffic in soft or wet ground;</p> <p>Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement,</p>	Neutral – Not significant	Neutral – Not significant
	Requirement for dewatering, reducing flow to groundwater abstractions and surface water bodies, and changes to soil hydrology.	<p>Consideration of the potential effects would be undertaken where dewatering is required during both construction and decommissioning. Groundwater monitoring boreholes are currently being monitored to account for seasonal variation in groundwater levels. Following completion of monitoring and prior to construction the groundwater regime, and need for dewatering, would be determined. Mitigation measures to control groundwater would potentially include sheet piling around excavations, and controlled discharge to surface waters or soakaways. The measures would be in agreement with the Environment Agency and with the licence holders of groundwater abstractions where the Onshore Scheme is located within a Source Protection Zone.</p>	Minor adverse – Not significant	Minor adverse – Not significant
Groundwater underlying Drax PIG	Chemical spillages and leaks to ground and groundwater from plant and machinery, and	The storage and use of fuel and oils on site would also be in accordance with the Control of Pollution (Oil	Minor adverse – Not	Minor adverse – Not

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
Trap site	from chemicals and other contaminants stored on site.	Storage) (England)Regulations 2001	significant	significant
	Groundwater pollution due to the use of herbicides during site clearance.	Use of herbicides would be undertaken in accordance with relevant guidelines. Herbicide use will be limited to glyphosate, which is unlikely to have any long term effects, due to it breaking down readily in upper soil layers.	Minor adverse – Not significant	Minor adverse – Not significant
	Import of Building materials	Any material imported to site, such as stone for pipe bedding, would be natural quarried stone or if recycled material would undergo chemical testing. The suite of contaminants site use criteria would be agreed with regulatory authorities, in order to demonstrate that the material is suitable for use on site and does pose a risk to human health or the environment.	Neutral – Not significant	Neutral – Not significant
	Compaction of subsoil due to construction vehicle movements degrading soil quality and causing potential water logging.	Protective bog mats or temporary roads would be used where required to prevent compaction of subsoil from construction traffic in soft or wet ground; Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement,	Minor adverse – Not significant	Minor adverse – Not significant
	Requirement for dewatering, reducing flow to groundwater abstractions and surface water bodies, and changes to soil hydrology.	Consideration of the potential effects would be undertaken where dewatering is required during both construction and decommissioning. Groundwater monitoring boreholes are currently being monitored to account for seasonal variation in groundwater levels. Following completion of monitoring and prior to construction the groundwater regime, and need for dewatering, would be determined. Mitigation measures to control groundwater would potentially include sheet piling around excavations, and controlled discharge to surface waters or soakaways. The measures would be in agreement with the Environment Agency and with the licence holders of groundwater abstractions where the Onshore Scheme is located within a Source Protection	Minor adverse – Not significant	Minor adverse – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		Zone.		
Groundwater underlying Drax PIG Trap site	Chemical spillages and leaks to ground and groundwater from plant and machinery, and from chemicals and other contaminants stored on site.	The storage and use of fuel and oils on site would also be in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001	Minor adverse – Not significant	Minor adverse – Not significant
	Groundwater pollution due to the use of herbicides during site works.	Use of herbicides would be undertaken in accordance with relevant guidelines. Herbicide use will be limited to glyphosate, which is unlikely to have any long term effects, due to it breaking down readily in upper soil layers.	Minor adverse – Not significant	Minor adverse – Not significant
	Import of Building materials	Any material imported to site, such as stone for pipe bedding, would be natural quarried stone or if recycled material would undergo chemical testing. The suite of contaminants site use criteria would be agreed with regulatory authorities, in order to demonstrate that the material is suitable for use on site and does pose a risk to human health or the environment.	Neutral – Not significant	Neutral – Not significant
Camblesforth Multi-junction Site				
Geology underlying Camblesforth Multi-junction Site	Chemical spillages and leaks to ground and groundwater from plant and machinery, and from chemicals and other contaminants stored on site.	The storage and use of fuel and oils on site would also be in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001	Neutral – Not significant	Neutral – Not significant
	Ground pollution due to the use of herbicides during site clearance.	Use of herbicides would be undertaken in accordance with relevant guidelines. Herbicide use will be limited to glyphosate, which is unlikely to have any long term effects, due to it breaking down readily in upper soil layers.	Neutral – Not significant	Neutral – Not significant
	Import of Building materials	Any material imported to site, such as stone for pipe bedding, would be natural quarried stone or if recycled material would undergo chemical testing. The suite of contaminants site use criteria would be agreed with regulatory authorities, in order to demonstrate that the	Neutral – Not significant	Neutral – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		material is suitable for use on site and does pose a risk to human health or the environment.		
	Disturbance of potentially contaminated soils posing a potential risk to human health, groundwater, soils and geology.	<p>Risk assessments in accordance with the Health and Safety at Work Act to restrict exposure to potentially harmful substances to a safe level for construction workers. CDM practices would be applied;</p> <p>Dust suppression measures to prevent against excessive dust generation, for example impermeable covers spread over mounds of bare soil and wetting of bare soil during dry conditions. Implementation of these simple measures can reduce the effects to construction workers and adjacent site users from potentially contaminated dusts;</p> <p>All vehicles leaving the site would go through a wheel wash to prevent spreading of contamination onto off-site roads. Furthermore, vehicles carrying contaminated soils off-site would only to be loaded up to appropriate levels and be covered to prevent conditioned sediments dropping onto roads;</p> <p>Containment barriers to prevent contaminants that may migrate along the Pipeline to uncontaminated soils.</p>	Neutral – Not significant	Neutral – Not significant
	Changes in soil structure and reduction of soil quality due to compaction or erosion during storage.	<p>Soils would only be handled in suitable conditions when they are not excessively wet to prevent loss of structure and fertility;</p> <p>Topsoil storage bunds would be restricted to a maximum height of 3 m to minimise risk of compaction and development of adverse conditions within the topsoil heap that may affect structure and fertility;</p> <p>Soil would be stripped using appropriate machinery (to prevent compaction) and stored in bunds adjacent to the area stripped to ensure the soil is returned to the same area during reinstatement;</p>	Neutral – Not significant	Neutral – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		<p>Protective bog mats or temporary roads would be used where required to prevent compaction of subsoil from construction traffic in soft or wet ground;</p> <p>Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement; and,</p> <p>Storage of excavated material in clearly defined areas to prevent mixing of topsoil and subsoil during construction</p>		
	Compaction of subsoil due to construction vehicle movements degrading soil quality and causing potential water logging.	<p>Protective bog mats or temporary roads would be used where required to prevent compaction of subsoil from construction traffic in soft or wet ground;</p> <p>Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement,</p>	Neutral – Not significant	Neutral – Not significant
	Requirement for dewatering, reducing flow to groundwater abstractions and surface water bodies, and changes to soil hydrology.	<p>Consideration of the potential effects would be undertaken where dewatering is required during both construction and decommissioning. Groundwater monitoring boreholes are currently being monitored to account for seasonal variation in groundwater levels. Following completion of monitoring and prior to construction the groundwater regime, and need for dewatering, would be determined. Mitigation measures to control groundwater would potentially include sheet piling around excavations, and controlled discharge to surface waters or soakaways. The measures would be in agreement with the Environment Agency and with the licence holders of groundwater abstractions where the Onshore Scheme is located within a Source Protection Zone.</p>	Minor adverse – Not significant	Minor adverse – Not significant
Groundwater underlying Camblesforth Multi-junction Site	Chemical spillages and leaks to ground and groundwater from plant and machinery, and from chemicals and other contaminants stored on site.	The storage and use of fuel and oils on site would also be in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001	Minor adverse – Not significant	Minor adverse – Not significant
	Groundwater pollution due to the use of	Use of herbicides would be undertaken in accordance with relevant guidelines. Herbicide use will be limited to	Minor adverse – Not	Minor adverse – Not

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	herbicides during site clearance.	glyphosate, which is unlikely to have any long term effects, due to it breaking down readily in upper soil layers.	significant	significant
	Disturbance of potentially contaminated soils posing a potential risk to groundwater	All vehicles leaving the site would go through a wheel wash to prevent spreading of contamination onto off-site roads. Furthermore, vehicles carrying contaminated soils off-site would only to be loaded up to appropriate levels and be covered to prevent conditioned sediments dropping onto roads; Where piled foundations are used they would be designed in accordance with the Environment Agency guidance document 'Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention'; and Containment barriers to prevent contaminants that may migrate along the Pipeline to uncontaminated soils or Controlled Waters.	Minor adverse – Not significant	Minor adverse – Not significant
	Import of Building materials	Any material imported to site, such as stone for pipe bedding, would be natural quarried stone or if recycled material would undergo chemical testing. The suite of contaminants site use criteria would be agreed with regulatory authorities, in order to demonstrate that the material is suitable for use on site and does pose a risk to human health or the environment.	Neutral – Not significant	Neutral – Not significant
	Compaction of subsoil due to construction vehicle movements degrading soil quality and causing potential water logging.	Protective bog mats or temporary roads would be used where required to prevent compaction of subsoil from construction traffic in soft or wet ground; Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement,	Minor adverse – Not significant	Minor adverse – Not significant
	Requirement for dewatering, reducing flow to groundwater abstractions and surface water bodies, and changes to soil hydrology.	Consideration of the potential effects would be undertaken where dewatering is required during both construction and decommissioning. Groundwater monitoring boreholes are currently being monitored to	Minor adverse – Not significant	Minor adverse – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		account for seasonal variation in groundwater levels. Following completion of monitoring and prior to construction the groundwater regime, and need for dewatering, would be determined. Mitigation measures to control groundwater would potentially include sheet piling around excavations, and controlled discharge to surface waters or soakaways. The measures would be in agreement with the Environment Agency and with the licence holders of groundwater abstractions where the Onshore Scheme is located within a Source Protection Zone.		
	Chemical spillages and leaks to ground and groundwater from plant and machinery, and from chemicals and other contaminants stored on site.	The storage and use of fuel and oils on site would also be in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001	Minor adverse – Not significant	Minor adverse – Not significant
	Groundwater pollution due to the use of herbicides during site clearance.	Use of herbicides would be undertaken in accordance with relevant guidelines. Herbicide use will be limited to glyphosate, which is unlikely to have any long term effects, due to it breaking down readily in upper soil layers.	Minor adverse – Not significant	Minor adverse – Not significant
	Disturbance of potentially contaminated soils posing a potential risk to groundwater.	All vehicles leaving the site would go through a wheel wash to prevent spreading of contamination onto off-site roads. Furthermore, vehicles carrying contaminated soils off-site would only to be loaded up to appropriate levels and be covered to prevent conditioned sediments dropping onto roads; Where piled foundations are used they would be designed in accordance with the Environment Agency guidance document 'Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention'; and Containment barriers to prevent contaminants that may migrate along the Pipeline to uncontaminated soils or	Minor adverse – Not significant	Minor adverse – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		Controlled Waters.		
	Import of Building materials	Any material imported to site, such as stone for pipe bedding, would be natural quarried stone or if recycled material would undergo chemical testing. The suite of contaminants site use criteria would be agreed with regulatory authorities, in order to demonstrate that the material is suitable for use on site and does pose a risk to human health or the environment.	Neutral – Not significant	Neutral – Not significant
Tollingham Block Valve Site				
Geology underlying Tollingham Block Valve Site	Chemical spillages and leaks to ground and groundwater from plant and machinery, and from chemicals and other contaminants stored on site.	The storage and use of fuel and oils on site would also be in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001	Neutral – Not significant	Neutral – Not significant
	Ground pollution due to the use of herbicides during site clearance.	Use of herbicides would be undertaken in accordance with relevant guidelines. Herbicide use will be limited to glyphosate, which is unlikely to have any long term effects, due to it breaking down readily in upper soil layers.	Neutral – Not significant	Neutral – Not significant
	Import of Building materials	Any material imported to site, such as stone for pipe bedding, would be natural quarried stone or if recycled material would undergo chemical testing. The suite of contaminants site use criteria would be agreed with regulatory authorities, in order to demonstrate that the material is suitable for use on site and does pose a risk to human health or the environment.	Neutral – Not significant	Neutral – Not significant
	Changes in soil structure and reduction of soil quality due to compaction or erosion during storage.	Soils would only be handled in suitable conditions when they are not excessively wet to prevent loss of structure and fertility; Topsoil storage bunds would be restricted to a maximum height of 3 m to minimise risk of compaction and development of adverse conditions within the topsoil	Neutral – Not significant	Neutral – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		<p>heap that may affect structure and fertility;</p> <p>Soil would be stripped using appropriate machinery (to prevent compaction) and stored in bunds adjacent to the area stripped to ensure the soil is returned to the same area during reinstatement;</p> <p>Protective bog mats or temporary roads would be used where required to prevent compaction of subsoil from construction traffic in soft or wet ground;</p> <p>Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement; and,</p> <p>Storage of excavated material in clearly defined areas to prevent mixing of topsoil and subsoil during construction</p>		
	Compaction of subsoil due to construction vehicle movements degrading soil quality and causing potential water logging.	<p>Protective bog mats or temporary roads would be used where required to prevent compaction of subsoil from construction traffic in soft or wet ground;</p> <p>Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement,</p>	Neutral – Not significant	Neutral – Not significant
	Requirement for dewatering, reducing flow to groundwater abstractions and surface water bodies, and changes to soil hydrology.	<p>Consideration of the potential effects would be undertaken where dewatering is required during both construction and decommissioning. Groundwater monitoring boreholes are currently being monitored to account for seasonal variation in groundwater levels. Following completion of monitoring and prior to construction the groundwater regime, and need for dewatering, would be determined. Mitigation measures to control groundwater would potentially include sheet piling around excavations, and controlled discharge to surface waters or soakaways. The measures would be in agreement with the Environment Agency and with the licence holders of groundwater abstractions where the Onshore Scheme is located within a Source Protection Zone.</p>	Minor adverse – Not significant	Minor adverse – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
Groundwater underlying Tillingham Block Valve Site	Chemical spillages and leaks to ground and groundwater from plant and machinery, and from chemicals and other contaminants stored on site.	The storage and use of fuel and oils on site would also be in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001	Minor adverse – Not significant	Minor adverse – Not significant
	Ground pollution due to the use of herbicides during site clearance.	Use of herbicides would be undertaken in accordance with relevant guidelines. Herbicide use will be limited to glyphosate, which is unlikely to have any long term effects, due to it breaking down readily in upper soil layers.	Minor adverse – Not significant	Minor adverse – Not significant
	Requirement for dewatering, reducing flow to groundwater abstractions and surface water bodies, and changes to soil hydrology.	Consideration of the potential effects would be undertaken where dewatering is required during both construction and decommissioning. Groundwater monitoring boreholes are currently being monitored to account for seasonal variation in groundwater levels. Following completion of monitoring and prior to construction the groundwater regime, and need for dewatering, would be determined. Mitigation measures to control groundwater would potentially include sheet piling around excavations, and controlled discharge to surface waters or soakaways. The measures would be in agreement with the Environment Agency and with the licence holders of groundwater abstractions where the Onshore Scheme is located within a Source Protection Zone.	Minor adverse – Not significant	Minor adverse – Not significant
	Import of Building materials	Any material imported to site, such as stone for pipe bedding, would be natural quarried stone or if recycled material would undergo chemical testing. The suite of contaminants site use criteria would be agreed with regulatory authorities, in order to demonstrate that the material is suitable for use on site and does pose a risk to human health or the environment.	Neutral – Not significant	Neutral – Not significant
	Compaction of subsoil due to construction vehicle movements degrading soil quality and	Protective bog mats or temporary roads would be used where required to prevent compaction of subsoil from	Minor adverse – Not significant	Minor adverse – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	causing potential water logging.	construction traffic in soft or wet ground; Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement,		
Dalton Block Valve Site				
Geology underlying Dalton Block Valve Site	Chemical spillages and leaks to ground and groundwater from plant and machinery, and from chemicals and other contaminants stored on site.	The storage and use of fuel and oils on site would also be in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001	Neutral – Not significant	Neutral – Not significant
	Ground pollution due to the use of herbicides during site clearance.	Use of herbicides would be undertaken in accordance with relevant guidelines. Herbicide use will be limited to glyphosate, which is unlikely to have any long term effects, due to it breaking down readily in upper soil layers.	Neutral – Not significant	Neutral – Not significant
	Import of Building materials	Any material imported to site, such as stone for pipe bedding, would be natural quarried stone or if recycled material would undergo chemical testing. The suite of contaminants site use criteria would be agreed with regulatory authorities, in order to demonstrate that the material is suitable for use on site and does pose a risk to human health or the environment.	Neutral – Not significant	Neutral – Not significant
	Changes in soil structure and reduction of soil quality due to compaction or erosion during storage.	Soils would only be handled in suitable conditions when they are not excessively wet to prevent loss of structure and fertility; Topsoil storage bunds would be restricted to a maximum height of 3 m to minimise risk of compaction and development of adverse conditions within the topsoil heap that may affect structure and fertility; Soil would be stripped using appropriate machinery (to prevent compaction) and stored in bunds adjacent to the area stripped to ensure the soil is returned to the same area during reinstatement;	Neutral – Not significant	Neutral – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		<p>Protective bog mats or temporary roads would be used where required to prevent compaction of subsoil from construction traffic in soft or wet ground;</p> <p>Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement; and,</p> <p>Storage of excavated material in clearly defined areas to prevent mixing of topsoil and subsoil during construction</p>		
Groundwater underlying Dalton Block Valve Site	Chemical spillages and leaks to ground and groundwater from plant and machinery, and from chemicals and other contaminants stored on site.	The storage and use of fuel and oils on site would also be in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001	Minor adverse – Not significant	Minor adverse – Not significant
	Ground pollution due to the use of herbicides during site clearance.	Use of herbicides would be undertaken in accordance with relevant guidelines. Herbicide use will be limited to glyphosate, which is unlikely to have any long term effects, due to it breaking down readily in upper soil layers.	Minor adverse – Not significant	Minor adverse – Not significant
	Import of Building materials	Any material imported to site, such as stone for pipe bedding, would be natural quarried stone or if recycled material would undergo chemical testing. The suite of contaminants site use criteria would be agreed with regulatory authorities, in order to demonstrate that the material is suitable for use on site and does pose a risk to human health or the environment.	Neutral – Not significant	Neutral – Not significant
Skerne Block Valve Site				
Geology underlying Skerne Block Multi-junction Site	Chemical spillages and leaks to ground and groundwater from plant and machinery, and from chemicals and other contaminants stored on site.	The storage and use of fuel and oils on site would also be in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001	Neutral – Not significant	Neutral – Not significant
	Ground pollution due to the use of herbicides during site clearance.	Use of herbicides would be undertaken in accordance with relevant guidelines. Herbicide use will be limited to	Neutral – Not significant	Neutral – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		glyphosate, which is unlikely to have any long term effects, due to it breaking down readily in upper soil layers.		
	Import of Building materials	Any material imported to site, such as stone for pipe bedding, would be natural quarried stone or if recycled material would undergo chemical testing. The suite of contaminants site use criteria would be agreed with regulatory authorities, in order to demonstrate that the material is suitable for use on site and does pose a risk to human health or the environment.	Neutral – Not significant	Neutral – Not significant
	Disturbance of potentially contaminated soils posing a potential risk to human health, groundwater, Soils and geology.	<p>Risk assessments in accordance with the Health and Safety at Work Act to restrict exposure to potentially harmful substances to a safe level for construction workers. CDM practices would be applied;</p> <p>Dust suppression measures to prevent against excessive dust generation, for example impermeable covers spread over mounds of bare soil and wetting of bare soil during dry conditions. Implementation of these simple measures can reduce the effects to construction workers and adjacent site users from potentially contaminated dusts;</p> <p>All vehicles leaving the site would go through a wheel wash to prevent spreading of contamination onto off-site roads. Furthermore, vehicles carrying contaminated soils off-site would only to be loaded up to appropriate levels and be covered to prevent conditioned sediments dropping onto roads;</p> <p>Containment barriers to prevent contaminants that may migrate along the Pipeline to uncontaminated soils. The nature of the barriers would depend on the nature of the mobile contaminants, however, the barrier may simply consist of clay walls within and across the trench sealed around the exterior of the pipe, to act as a water stop and prevent flow of contaminants beyond the boundary</p>	Neutral – Not significant	Neutral – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		of those areas identified as being contaminated.		
	Changes in soil structure and reduction of soil quality due to compaction or erosion during storage.	<p>Soils would only be handled in suitable conditions when they are not excessively wet to prevent loss of structure and fertility;</p> <p>Topsoil storage bunds would be restricted to a maximum height of 3 m to minimise risk of compaction and development of adverse conditions within the topsoil heap that may affect structure and fertility;</p> <p>Soil would be stripped using appropriate machinery (to prevent compaction) and stored in bunds adjacent to the area stripped to ensure the soil is returned to the same area during reinstatement;</p> <p>Protective bog mats or temporary roads would be used where required to prevent compaction of subsoil from construction traffic in soft or wet ground;</p> <p>Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement; and,</p> <p>Storage of excavated material in clearly defined areas to prevent mixing of topsoil and subsoil during construction</p>	Neutral – Not significant	Neutral – Not significant
	Compaction of subsoil due to construction vehicle movements degrading soil quality and causing potential water logging.	<p>Protective bog mats or temporary roads would be used where required to prevent compaction of subsoil from construction traffic in soft or wet ground;</p> <p>Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement,</p>	Neutral – Not significant	Neutral – Not significant
	Requirement for dewatering, reducing flow to groundwater abstractions and surface water bodies, and changes to soil hydrology.	<p>Consideration of the potential effects would be undertaken where dewatering is required during both construction and decommissioning. Groundwater monitoring boreholes are currently being monitored to account for seasonal variation in groundwater levels. Following completion of monitoring and prior to construction the groundwater regime, and need for dewatering, would be determined. Mitigation measures</p>	Minor adverse – Not significant	Minor adverse – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		to control groundwater would potentially include sheet piling around excavations, and controlled discharge to surface waters or soakaways. The measures would be in agreement with the Environment Agency and with the licence holders of groundwater abstractions where the Onshore Scheme is located within a Source Protection Zone.		
Groundwater underlying Skerne Block Valve Site	Chemical spillages and leaks to ground and groundwater from plant and machinery, and from chemicals and other contaminants stored on site.	The storage and use of fuel and oils on site would be in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001	Neutral – Not significant	Neutral – Not significant
	Ground pollution due to the use of herbicides during site clearance.	Use of herbicides would be undertaken in accordance with relevant guidelines. Herbicide use will be limited to glyphosate, which is unlikely to have any long term effects, due to it breaking down readily in upper soil layers.	Neutral – Not significant	Neutral – Not significant
	Disturbance of potentially contaminated soils posing a potential risk to groundwater, soils and geology.	All vehicles leaving the site would go through a wheel wash to prevent spreading of contamination onto off-site roads. Furthermore, vehicles carrying contaminated soils off-site would only to be loaded up to appropriate levels and be covered to prevent conditioned sediments dropping onto roads; Where piled foundations are used they would be designed in accordance with the Environment Agency guidance document 'Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention'; and Containment barriers to prevent contaminants that may migrate along the Pipeline to uncontaminated soils or Controlled Waters. The nature of the barriers would depend on the nature of the mobile contaminants, however, the barrier may simply consist of clay walls within and across the trench sealed around the exterior	Minor adverse – Not significant	Minor adverse – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		of the pipe, to act as a water stop and prevent flow of contaminants beyond the boundary of those areas identified as being contaminated.		
	Requirement for dewatering, reducing flow to groundwater abstractions and surface water bodies, and changes to soil hydrology.	Consideration of the potential effects would be undertaken where dewatering is required during both construction and decommissioning. Groundwater monitoring boreholes are currently being monitored to account for seasonal variation in groundwater levels. Following completion of monitoring and prior to construction the groundwater regime, and need for dewatering, would be determined. Mitigation measures to control groundwater would potentially include sheet piling around excavations, and controlled discharge to surface waters or soakaways. The measures would be in agreement with the Environment Agency and with the licence holders of groundwater abstractions where the Onshore Scheme is located within a Source Protection Zone.	Minor adverse – Not significant	Minor adverse – Not significant
	Import of Building materials	Any material imported to site, such as stone for pipe bedding, would be natural quarried stone or if recycled material would undergo chemical testing. The suite of contaminants site use criteria would be agreed with regulatory authorities, in order to demonstrate that the material is suitable for use on site and does pose a risk to human health or the environment.	Neutral – Not significant	Neutral – Not significant
	Compaction of subsoil due to construction vehicle movements degrading soil quality and causing potential water logging.	Protective bog mats or temporary roads would be used where required to prevent compaction of subsoil from construction traffic in soft or wet ground; Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement,	Minor adverse – Not significant	Minor adverse – Not significant
Barmston Pumping Station				
Geology underlying	Chemical spillages and leaks to ground and groundwater from plant and machinery, and	The storage and use of fuel and oils on site would also be in accordance with the Control of Pollution (Oil	Neutral – Not significant	Neutral – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
Barmston Pumping Station	from chemicals and other contaminants stored on site.	Storage) (England) Regulations 2001		
	Ground pollution due to the use of herbicides during site clearance.	Use of herbicides would be undertaken in accordance with relevant guidelines. Herbicide use will be limited to glyphosate, which is unlikely to have any long term effects, due to it breaking down readily in upper soil layers.	Neutral – Not significant	Neutral – Not significant
	Import of Building materials	Any material imported to site, such as stone for pipe bedding, would be natural quarried stone or if recycled material would undergo chemical testing. The suite of contaminants site use criteria would be agreed with regulatory authorities, in order to demonstrate that the material is suitable for use on site and does pose a risk to human health or the environment.	Neutral – Not significant	Neutral – Not significant
	Chemical spillages and leaks from storage and use of fuels and other chemicals during operation	The storage and use of potentially polluting chemical substances, including diesel, lubricating oils, mono ethylene glycol and glycol at Barmston Pumping Station during operation, as well as during site decommissioning, would be in accordance with good practice guidance, including:	Neutral – Not significant	Neutral – Not significant
	Changes in soil structure and reduction of soil quality due to compaction or erosion during storage.	Soils would only be handled in suitable conditions when they are not excessively wet to prevent loss of structure and fertility; Topsoil storage bunds would be restricted to a maximum height of 3 m to minimise risk of compaction and development of adverse conditions within the topsoil heap that may affect structure and fertility; Soil would be stripped using appropriate machinery (to prevent compaction) and stored in bunds adjacent to the area stripped to ensure the soil is returned to the same area during reinstatement; Protective bog mats or temporary roads would be used	Neutral – Not significant	Neutral – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		<p>where required to prevent compaction of subsoil from construction traffic in soft or wet ground;</p> <p>Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement; and,</p> <p>Storage of excavated material in clearly defined areas to prevent mixing of topsoil and subsoil during construction</p>		
	Requirement for dewatering, reducing flow to groundwater abstractions and surface water bodies, and changes to soil hydrology.	<p>Consideration of the potential effects would be undertaken where dewatering is required during both construction and decommissioning. Groundwater monitoring boreholes are currently being monitored to account for seasonal variation in groundwater levels. Following completion of monitoring and prior to construction the groundwater regime, and need for dewatering, would be determined. Mitigation measures to control groundwater would potentially include sheet piling around excavations, and controlled discharge to surface waters or soakaways. The measures would be in agreement with the Environment Agency and with the licence holders of groundwater abstractions where the Onshore Scheme is located within a Source Protection Zone.</p>	Minor adverse – Not significant	Minor adverse – Not significant
	Compaction of subsoil due to construction vehicle movements degrading soil quality and causing potential water logging.	<p>Protective bog mats or temporary roads would be used where required to prevent compaction of subsoil from construction traffic in soft or wet ground;</p> <p>Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement,</p>	Neutral – Not significant	Neutral – Not significant
Groundwater underlying Barmston Pumping Station	Chemical spillages and leaks to ground and groundwater from plant and machinery, and from chemicals and other contaminants stored on site.	The storage and use of fuel and oils on site would also be in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001	Minor adverse – Not significant	Minor adverse – Not significant
	Ground pollution due to the use of herbicides	Use of herbicides would be undertaken in accordance	Minor adverse – Not	Minor adverse – Not

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	during site clearance.	with relevant guidelines. Herbicide use will be limited to glyphosate, which is unlikely to have any long term effects, due to it breaking down readily in upper soil layers.	significant	significant
	Requirement for dewatering, reducing flow to groundwater abstractions and surface water bodies, and changes to soil hydrology.	Consideration of the potential effects would be undertaken where dewatering is required during both construction and decommissioning. Groundwater monitoring boreholes are currently being monitored to account for seasonal variation in groundwater levels. Following completion of monitoring and prior to construction the groundwater regime, and need for dewatering, would be determined. Mitigation measures to control groundwater would potentially include sheet piling around excavations, and controlled discharge to surface waters or soakaways. The measures would be in agreement with the Environment Agency and with the licence holders of groundwater abstractions where the Onshore Scheme is located within a Source Protection Zone.	Minor adverse – Not significant	Minor adverse – Not significant
	Import of Building materials	Any material imported to site, such as stone for pipe bedding, would be natural quarried stone or if recycled material would undergo chemical testing. The suite of contaminants site use criteria would be agreed with regulatory authorities, in order to demonstrate that the material is suitable for use on site and does pose a risk to human health or the environment.	Neutral – Not significant	Neutral – Not significant
	Compaction of subsoil due to construction vehicle movements degrading soil quality and causing potential water logging.	Protective bog mats or temporary roads would be used where required to prevent compaction of subsoil from construction traffic in soft or wet ground; Ripping of the subsoil, particularly over the running track to alleviate compaction prior to topsoil replacement,	Minor adverse – Not significant	Minor adverse – Not significant

Summary of Geology, Hydrogeology and Ground Conditions Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	Chemical spillages and leaks to ground and groundwater from plant and machinery, and from chemicals and other contaminants stored on site.	The storage and use of fuel and oils on site would also be in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001	Minor adverse – Not significant	Minor adverse – Not significant
	Ground pollution due to the use of herbicides during site clearance.	Use of herbicides would be undertaken in accordance with relevant guidelines. Herbicide use will be limited to glyphosate, which is unlikely to have any long term effects, due to it breaking down readily in upper soil layers.	Minor adverse – Not significant	Minor adverse – Not significant

1.3 LAND USE AND AGRICULTURE (DOCUMENT 6.8) SUMMARY OF RESIDUAL EFFECTS

Summary of Land Use and Agriculture Residual Effects			
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects
Effects on Development Land	Land allocated to house is temporarily used for a construction compound	Discussions with the landowner for developing the land to enable the landowner to develop different parts of the land	Neutral (Not significant)
Agricultural Land Take effects on farm businesses.	Land lost to agricultural production either temporary or permanent	Compensation for permanent land loss and compensation for lost income on temporary land loss. Land and drainage carefully reinstated to ensure a return to full productivity. (Document 7.5 – Code of Construction Practice)	Neutral (Not significant)
Permanent loss of BMV land.	Land permanently lost for AGI construction.	None identified/necessary	Minor Adverse (Not significant)
Effects on Farming Practices including farm buildings and environmental stewardship schemes.	Disturbance to habitats for environmental schemes due to construction and re-instatement. Changes to rotations and income streams caused by construction due to land take, severance and access issues	Compensation for income foregone, severance and access costs. Provision of alternative access where applicable. Managing site access to help minimise traffic impacts	Neutral (Not significant)
Economic Effects	Possible long term effect on income due to land loss. Reduced production due to land disturbance from pipeline construction	Compensation for income reductions due to pipeline construction. Suitable drainage re-instatement	Minor Adverse (not significant) at most due to the effective compensation procedure, which will ensure no farms suffer a reduction in income as a result of the Onshore Scheme.
Other Effects:	Compaction of the soils and change to soil structure as a result of storing the soils during construction. Risk to biosecurity of the soils and livestock due to disease transfer between farms.	Store soils correctly and put procedures in place when moving livestock. Fencing materials that have come into contact with livestock will not be used elsewhere.	Minor Adverse (not significant)

1.4 ECOLOGY AND NATURE CONSERVATION (DOCUMENT 6.9) SUMMARY OF RESIDUAL EFFECTS

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
Pipeline Envelope (Including Temporary Construction Areas)						
Statutory Designated Sites						
River Derwent SSSI (Camblesforth Multi-junction to Tollingham Block Valve)	A nationally important site, it is considered to represent one of the best British examples of the classic river profile. This lowland section supports diverse communities of aquatic flora and fauna, many elements of which are nationally significant. National	Effects on SSSI habitats via changes in water quality and hydrology of connecting watercourses.	During construction, a Water Management Plan will be implemented as set out in Section 9 of the CoCP (Document 7.5). This will include pollution control measures with reference to the Environment Agency’s Pollution Prevention Guidelines for Works and maintenance in or near water (PPG5) in order to avoid and minimise adverse effects on the water quality of aquatic habitats including those minor watercourses and drains which may link to the River Derwent. Measures to prevent sediment laden runoff entering watercourses will also be undertaken to prevent water pollution. More detailed descriptions of mitigation regarding the protection of the water environment can be found within Section 8 of Chapter 6: Water Resources and Flood Risk (Document 6.6).	No Change	Neutral Not significant	Not significant
Barnhill Meadows SSSI (Camblesforth Multi-junction to Tollingham Block Valve)	A nationally important site comprising seven fields lying just to the west of Howden, in the flood plain of the Old Derwent. The site is important for its herb-rich, unimproved, neutral grassland, a habitat now uncommon in the intensively farmed landscape of Humberside and in lowland England generally. National					
South Cliffe Common SSSI	A mixture of heathland and acidic grassland. The site forms one of only six extensive heathlands developed on sand remaining					

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
	in Humberside. National					
River Hull Headwaters SSSI (including Kelk Beck tributary) (Skerne Block Valve to Barmston Pumping Station including Barmston Pumping Station to MLWS)	Nationally important as the most northerly chalk stream system in Britain, with other habitats of limited distribution including riverside grassland, woodland and fen. Supports a diversity of breeding birds and fish species. The Pipeline Envelope crosses the river in two locations. National	Temporary loss and disturbance of bank side habitat on Kelk Beck	<p>Preconstruction ecological surveys will be undertaken in advance of any works being undertaken to re-affirm the status of the site and crossing location and inform the details of the EA consent application.</p> <p>During the construction of the single span temporary access bridge across the Kelk Beck a buffer zone of a minimum of 2 m will be retained to avoid direct effects upon bank side habitat and the SSSI designated river channel habitats.</p> <p>Working areas will be fenced to prevent encroachment onto adjacent habitat.</p> <p>Bank top habitats will be fully reinstated following construction which will be set out as part of the EA consent application and Ecological Mitigation Plan.</p> <p>Necessary consents will be obtained from the Environment Agency (Flood Defence and Land Drainage consents, Environmental Permits as applicable) and works will be carried out in accordance with method statements and conditions applied to those consents.</p>	No Change	Neutral Not Significant	Not Significant
		Disturbance of faunal species associated with the SSSI designation	<p>The working area for the non-open cut crossing at the two River Hull Headwater crossing locations will ensure that there is at least a 7 m buffer zone retained (to the river bank therefore a stand off from the boundary of the SSSI boundary will be adopted throughout the construction phase (excluding the temporary construction access at Kelk Beck). Working areas will be fenced to prevent encroachment by vehicles, machinery and contractor personnel onto adjacent habitat. These measures are outlined in Section 9 (Protection of Water Quality) and 10</p>	Negligible Negative Temporary	Slight Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
			(Ecology) of the CoCP (Document 7.5).			
		Pollution of the watercourse	<p>During construction, a Water Management Plan will be implemented as set out in Section 9 (Protection of Water Quality) of the CoCP (Document 7.5). This will include pollution control measures with reference to the Environment Agency’s Pollution Prevention Guidelines for Works and maintenance in or near water (PPG5) in order to avoid and minimise adverse effects on the water quality of aquatic habitats including those minor watercourses and drains which may link to the River Hull. Measures to prevent sediment laden runoff entering watercourses will also be undertaken to prevent water pollution. More detailed descriptions of mitigation regarding the protection of the water environment can be found within Section 8 of Chapter 6: Water Resources and Flood Risk (Document 6.6).</p> <p>A detailed method of working will be formulated during detailed design which will be discussed and agreed with the Environment Agency and Natural England as part of the consents and licencing process. Works will be carried out in accordance with any conditions imposed by these consents and licences. These measures are set out in Section 10 of the CoCP (Document 7.5).</p>	No Change	Neutral Not Significant	Not Significant
Non Statutory Designated Sites						
Brockholes SINC (Camblesforth Multi-junction to Tollingham Block Valve)	Open water lake surrounded by scrub and tree vegetation used by a recreational fishing club. The Pipeline Envelope crosses the western edge of the site. County	Indirect effect on the lake (and aquatic ecology) from accidental spillages, silt laden run-off and dust.	<p>During construction, water management measures will be in place to avoid and minimise negative effects on water quality and aquatic habitats.</p> <p>Pre and post construction land drainage will be designed to ensure that the integrity of pre-existing land drainage systems is maintained as specified in Section 9 of the CoCP (Document 7.5).</p>	Minor Negative Short term and long term	Slight Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
Brindley's Wood Candidate LWS (Camblesforth Multi-junction to Tollingham Block Valve)	An area of broadleaved plantation woodland located directly adjacent to the Pipeline Envelope. County	Loss of trees to facilitate construction of the Pipeline.	Only a very small area of the LWS (82m2 is located within the Application Boundary/Pipeline Envelope. Therefore it is predicted that it is highly unlikely any trees will be felled to facilitate the construction of the Pipeline within the Pipeline Envelope in this area. However where any trees on the periphery of the site may need to be removed they will be replaced. In accordance with Section 10 of the CoCP (Document 7.5), mature trees will be replaced on a 4 for 1 basis and for young/semi-mature trees on a 1 for 1 basis using like for like species.	Negligible Negative Permanent/short-term	Negligible Adverse Not Significant	Not Significant
		Damage to retained trees from severance of roots, compaction of the soil, or exclusion of air and water to the soil.	Where trees will not be directly affected but are adjacent to the working width, mitigation will be implemented to ensure that the trees are not indirectly affected by the works. . Where practical such trees will be protected by the means of a fence. If this is not practical, additional measures to mitigate effects will include bog matting and/or sand padding to spread the weight of the machinery over the roots (where soil compaction may damage tree health). In addition preliminary work will be carried out before construction to remove any overhanging branches likely to obstruct or be damaged by the works.	Negligible Negative Permanent/short-term	Negligible Adverse Not Significant	Not Significant
Rushwood: Featherbed Lane Common and Drain, Bishopsoil Drain Candidate LWS (Camblesforth Multi-junction to Tollingham Block Valve)	The linear site comprises woodland, wetland (drains) and grassland habitats. The Pipeline Envelope runs adjacent to the site and crosses the eastern end of the site. County	Loss of trees to facilitate construction of the Pipeline	During detailed design every effort will be made to avoid the felling of mature trees located within the LWS. Where mature trees are removed they will be replaced on a 4 for 1 basis using like for like species. Where young/semi-mature trees are to be removed they will be replaced on a 1 for 1 basis, using like for like species, following consultation with East Riding of Yorkshire Council in respect to agreement of mitigation for the effect upon the LWS. in accordance with Section 10 of the CoCP (Document 7.5).	Negligible Negative Permanent/short-term	Negligible Adverse Not Significant	Not Significant
		Damage to retained trees from	Where trees will be retained adjacent to the working width, mitigation will be implemented to ensure that the	Negligible Negative Permanent/short-term	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
		severance of roots, compaction of the soil, or exclusion of air and water to the soil.	trees are not indirectly affected by the works. This will include protecting trees with a fence or use of bog mats to spread the weight of machinery and an incorporation of a root protection zone.			
		Temporary loss and severance of drain habitat.	The working width will be kept to the absolute minimum for safe working and will be fenced to prevent encroachment. Soils from each section of the drain will be removed and stored separately and replaced in the correct sequence. Bank side vegetation will be re-instated on completion of the works and the marginal zone will be left to colonise naturally.	Negligible Negative Short-term	Negligible Adverse Not Significant	Not Significant
		Pollution of the drain habitat from accidental spillages, silt laden run-off and dust.	During construction pollution control measures will be in place to avoid and minimise negative effects on water quality and aquatic habitats. A detailed method of working will be formulated during detailed design which will be agreed with the Environment Agency as part of the consents process.	No Change	Neutral Not Significant	Not Significant
Etton to Gardham Disused Railway LWS (incorporating the Hudson's Way LNR) (Tollingham Block Valve to Dalton Block Valve)	A 3 km long section of disused railway line comprising dense scrub, trees, ruderal and neutral calcareous grassland. The Pipeline Envelope crosses the western end of the site. County	Temporary loss of grassland and scrub habitat	The working area will be kept to the minimum safe working width as it crosses this LWS (forming part of the Hudson's Way dismantled railway). The working width will be fenced to prevent encroachment of construction activities, material storage or machinery into surrounding habitat and gated to allow continued use of the disused railway recreational route (Hudson's Way Rail Trail). The construction access will be topsoil stripped and the material will be stored separately to use for re-instatement. Consultation with East Riding of Yorkshire relevant biodiversity and landscape officer will be made to inform the re-instatement approach (and opportunities to enhance the LWS).	Negligible Negative Short-term	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
			The area will be re-instated on completion of the works using a grass seed mix that reflects the existing grassland. Seed sourced will be of British origin and preferably local provenance where suitable supplies are available. Fencing will be installed around re-seeded areas as necessary, to aid recovery of the reinstated area;			
		Damage of retained trees / scrub during construction	Where trees will not be directly affected but are adjacent to the working width, mitigation will be implemented to ensure that the trees are not indirectly affected by the works. This will include protecting trees with a fence or use of bog mats to distribute the weight of machinery.	Negligible Negative Short-term	Negligible Adverse Not Significant	Not Significant
Granny's Attic Railway LWS (Tollingham Block Valve to Dalton Block Valve)	Old, established semi-natural neutral and calcareous grassland. Quite floristically rich habitat with areas of dense scrub with tree cover. The Pipeline Envelope crosses the eastern end of the site. County	Damage to retained trees and scrub from severance of roots, compaction of the soil, or exclusion of air and water to the soil	Where trees will not be directly affected but are adjacent to the working width, mitigation will be implemented to ensure that the trees are not indirectly affected by the works. This will include protecting trees with a fence or use of bog mats to spread the weight of machinery and an incorporation of a root protection zone.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
Bracken Beck Wood Candidate LWS (Dalton Block Valve to Skerne Block Valve)	The site comprises broadleaved woodland habitat. The Pipeline Envelope lies directly adjacent to the site. County					

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
Copper Hall Wood Candidate LWS (Skerne Valve to Barmston Pumping Station)	The site comprises a small stand of broadleaved woodland habitat. The Pipeline Envelope lies directly adjacent to the site. County					
Barff Hill Wood Candidate LWS (Skerne Block Valve to Barmston Pumping Station)	The site comprises a small stand of broadleaved woodland habitat. The Pipeline crosses a small section of the site. County					
Foston Fox Covert Heronry LWS (Skerne Block Valve to Barmston Pumping Station)	A plantation woodland LWS, which is designated due to the presence of a nesting colony of grey heron. County	Temporary disturbance of nesting grey heron during construction	<p>Drainage activities within 50 m of the LWS site boundary will be limited to no more than on 1 day (maximum of 8 hours) on any one occasion and avoid the key heron activity periods; namely one hour after sunrise and one hour before sunset.</p> <p>Drainage activities will be localised in this area at one corner of the LWS site (associated with White Dike to the west of the LWS site). Drainage works would be undertaken either pre-construction or post-construction of the Pipeline towards the end of the main construction period, which will be outside the main heron nesting season.</p> <p>Main Pipeline construction work e.g. comprising trenching will be located greater than 50 m from the LWS and will not be undertaken in the sensitive pre-incubation/incubation period for grey heron which is between approximately mid February and mid April.</p>	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
			As part of the Scheme of Ecological Mitigation (as committed to by the CoCP (Document 7.5)), where any main construction works are required within proximity to the LWS, the need for monitoring of the site will be discussed with East Riding of Yorkshire Council in order to ensure effects on the LWS designating features are minimised during the construction of the Pipeline.			
Snakeholme Pastures YWT Nature Reserve (Skerne Block Valve to Barmston Pumping Station)	A grassland nature reserve site consisting of two grassland fields (3.7 hectares in total). Local	Indirect effect on YWT reserve habitat (grassland) from accidental spillages, silt laden run-off and dust during construction and dewatering activities.	A buffer zone of 7 m will be retained between construction activities and the boundary of the site during construction. During construction, pollution control measures will be implemented with reference to the Environment Agency's Pollution Prevention Guidelines for Works (PPG5). These include measures to prevent sediment laden runoff entering watercourses as set out in the CoCP (Document 7.5) and cause water pollution.	Negligible Negative Short term and long term	Negligible Adverse Not Significant	Not Significant
Habitats						
Arable land and improved grassland (All Sections)	These are the most dominant habitats within the Onshore Scheme. In the Pipeline Envelope there is 820 ha (93% of the total habitats) of arable (generally wheat, oil seed rape, potatoes) and improved grassland habitat. Local	Temporary loss of arable and improved grassland	For both habitat types topsoil will be removed carefully and stored separately from the sub-soil horizons. After Pipeline installation, the excavated soil horizons will be replaced in the correct sequence and the area then contoured to previous profiles and cultivated in liaison with landowners. For improved grassland the area will be re-seeded in liaison with the landowner.	Negligible Negative Short-term	Negligible Adverse Not Significant	Not Significant
Semi-improved grassland (All Sections)	Approximately 12 ha (1.4%) of the habitats within the Pipeline Envelope comprise semi-improved (poor and neutral) grassland.	Temporary loss of semi-improved grassland habitat	Soil will be treated in the same way as detailed under arable land. The working width will be kept to the minimum for safe working and will be fenced to prevent encroachment onto adjacent habitat. On completion of the works these grasslands will be re-instated in liaison with the landowners. The seed mix chosen will aim to	Negligible Negative Short-term	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
	Local		replicate the species composition of the areas, to be reinstated. Local provenance seed suppliers will be sought. Consideration will be given for opportunities to increase species diversity, especially along field margins and road verges, subject to discussions with landowners.			
Woodland and Trees (All Sections)	There are 6 ha (less than 1%) of woodland within the Pipeline Envelope, including both semi-natural and plantation. Borough	Temporary loss of woodland habitat	Where the Pipeline passes through areas of woodland the working width will generally be kept to the minimum necessary to allow safe working and safe access for plant and vehicles, which can be achieved by locating soil storage areas on adjacent non-sensitive land, such as arable, within an extended working width. The working width will be fenced to prevent encroachment onto adjacent areas of woodland. Areas of woodland will be replanted with canopy tree species and shrub species. The species used will be informed by the species recorded during surveys.	Minor Negative Permanent	Negligible Adverse Not Significant	Not Significant
		Temporary loss of individual trees (including pruning/lopping)	During detailed design routing will avoid mature and veteran trees where possible. Where mature trees are removed they will be replaced on a 4 to 1 basis. The pruning or lopping of trees will be avoided wherever possible. Where this is not possible the amount of pruning/lopping of trees will be kept to a minimum and will only be required to facilitate safe working. Pruning will only be minor and will only be undertaken subject to the completion of mitigation measures for bats as detailed below.	Negligible Negative Permanent	Negligible Adverse Not Significant	Not Significant
		Damage to retained trees from severance of roots, compaction of the soil, or exclusion of air and water to the soil	Where trees will not be directly affected but are adjacent to the working width, mitigation will be implemented to ensure that the trees are not indirectly affected by the works. This will include protecting trees with a fence or use of bog mats to distribute the weight of machinery.	Negligible Negative Short-term	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
Important Hedgerows (All Sections)	There are 90 Important hedgerows (under The Hedgerow Regulations 1997) located entirely or partially within the Pipeline Envelope. Regional	Temporary loss and severance of hedgerows	Throughout the length of the Pipeline the removal of sections of hedgerow will be kept to the minimum necessary to allow plant and vehicles safe operation and access. The Pipeline within the Pipeline Envelope will be routed to use existing gaps in the hedgerows and avoid sections of Important hedgerows wherever possible.	Minor Negative Medium -term	Slight Adverse Not Significant	Not Significant
Hedgerows – Species Rich (All Sections)	A total of 23 species rich hedgerows have been identified within the Pipeline Envelope. Borough		Hedgerows will be reinstated following construction and where there are banks and ditches adjacent to hedgerows these will be reformed to similar profiles as before and topsoil will be replaced. Hedgerow planting will be undertaken to match with adjacent and surrounding field hedgerows in species composition.			
Hedgerows – Species Poor (All Sections)	A total of 120 species poor hedgerows were identified within the Pipeline Envelope. Local		For hedgerows with a rich associated ground flora, hedge bank soil will be stripped and stored separately for use during reinstatement. Planting will be undertaken at the earliest opportunity, within the planting season and planting techniques will be designed to ensure rapid establishment and the development of a dense, broad habitat. Hedgerow re-planting will be of native species of local provenance where possible. All hedgerow planting will be carried out to National Grid procedures for landscape planting and maintenance and will be subject to a five year defects and maintenance period. The maintenance contractor will replace dead or dying plants, check rabbit proofing and maintain the areas in a weed free state by applying a well rotted mulch. These mitigation measures for hedgerows are set out in Section 10 and 12 of the CoCP (Document 7.5).			
Standing Water Habitat (Ponds, Lakes and Canals)	There are 15 standing waterbodies (excluding those which are already evaluated in other receptor groups)	Indirect effects on ponds from accidental spillages, silt laden run-off and	Where the working width is in proximity to a pond or other standing water body, appropriate measures will be implemented to protect water quality in these ponds from sediment release, dust and pollution from	Minor Negative Short term and long term	Slight Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
(All Sections)	located within Pipeline Envelope that may be indirectly affected by the Onshore Scheme. Borough	dust	accidental spillages during construction. As detailed in Section 9 of the CoCP (Document 7.5), during construction, pollution control measures will be implemented with reference to the Environment Agency’s Pollution Prevention Guidelines for Works and maintenance in or near water (PPG5) in order to avoid and minimise negative effects on the water quality of aquatic habitats. No discharges or abstractions will take place to or from ponds. More detailed descriptions of mitigation regarding the protection of the water environment can be found within Section 8 of Chapter 6: Water Resources and Flood Risk (Document 6.6). Pre and post construction land drainage will be designed to ensure that the integrity of pre-existing land drainage systems are maintained as detailed in Section 9 of the CoCP (Document 7.5). Mitigation measures to prevent the trench acting as a conduit for groundwater, will be installed where necessary to minimise any changes in local hydrology.			
Running Water (Main Rivers and WFD designated; and Streams, becks and drains - Non designated) (All Sections)	There are 12 main rivers and WFD designated watercourses (as detailed in Table 26) located across the region. Includes River Ouse, River Foulness, Market Weighton (disused) and Driffield Canal. Regional	Temporary loss of and severance of riparian habitat	As detailed in the CoCP (Document 7.5), at each watercourse crossing, the Pipeline route will be selected to minimise the effect on the watercourse and adjacent vegetation where possible. The area of riparian habitat that will be temporarily affected will be restricted to an area no wider than the minimum required for safe working practice.. Topsoil from the banks will be removed and stored separately for reinstatement after construction. The preconstruction bank and channel profiles will be restored on completion of the Pipeline crossing works. Channel bed-substrates will be replaced to the same composition and topsoil reinstated to the banks. Trees and woodland which may be located on the banks of open cut watercourse crossings will be	Negligible Negative Short-term	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
	All minor streams, becks, drains and dikes; of which there are 117 watercourses that are crossed by the Application Boundary. Borough		reinstated as outlined in the Woodland and Trees section above. Areas of grassland on top of the bank will be reseeded with an appropriate grass mix, whilst the marginal zone will be left to colonise naturally, supplemented with previously salvaged plants as appropriate.			
		Temporary disturbance of benthic environment	The working width through the channel will be kept to the minimum required for safe working practice and will be clearly marked to prevent encroachment. The channel bed material will be removed prior to the excavation of the trench, stored separately and replaced following the installation of the proposed pipeline to promote rapid colonisation of the area by aquatic invertebrates and aquatic plants. Where appropriate marginal vegetation of ecological value will be removed from the watercourse and stored upstream for use in reinstatement. The proposed working method will incorporate measures to maintain the flow downstream of the crossing point.	Negligible Negative Short-term	Negligible Adverse Not Significant	Not Significant
		Indirect effects on running water from accidental spillages, silt laden run-off and dust	During construction, Appropriate measures will be implemented to protect water quality from pollution sediment/silt run-off and dust during construction. These include measures to prevent sediment laden runoff entering watercourses as set out in the CoCP (Document 7.5) and cause water pollution. More detailed descriptions of mitigation regarding the protection of the surface water features can be found within Section 8 of Chapter 6: Water Resources and Flood Risk (Document 6.6). Pre and post construction land drainage will be designed to ensure that the integrity of pre-existing land drainage systems is maintained as detailed in Section 9 of the CoCP (Document 7.5).	No Change	Neutral Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
Maritime Cliff and Slope (including soft cliff)	The soft rock cliff at the landfall location is defined as a biodiversity habitat in the ERYBAP, in particular for its value to invertebrates. Local	Temporary loss and disturbance to maritime and soft cliff habitat during construction.	Mitigation by design has been the main approach to avoiding effects on the soft cliff habitat at the landfall location, due to the commitment to using a non-open cut technique for the Pipeline construction. The construction access will be kept to the minimum required for safe working practice and will be clearly marked to prevent encroachment. The piling works will be limited by ensuring the piled reception pit is located as far as possible from the cliff which will address the potential indirect vibration effects to any faun e.g. invertebrates which the soft cliff may support.	Minor Negative Temporary	Negligible Adverse Not Significant	Not Significant
Littoral Coarse Sands	The littoral coarse sand is an extensive habitat on the Holderness coast, although of little biodiversity value. Less than Local	Temporary loss of littoral coarse sand habitat during construction. (cofferdam and piling works).	Intertidal habitat is barren littoral coarse sand with sparse fauna and flora. The sparse biota of the intertidal zone means that there is limited bird feeding opportunity (when the tide is out) and for fish (when the tide is in). Considering the large abundance of similar habitat within the section of coast between Bridlington and Spurn Head, and the low biodiversity and foraging value this habitat presents, this temporary loss is considered to be insignificant. Excavated material will be carefully stored and returned in sequence on completion of the works.	Negligible Negative	Neutral Not Significant	Not Significant
Fen, Marsh and Bog	There is an area of brackish marsh/marshy grassland adjacent to the beach access which will be use for landfall construction. Local	There will be no direct effects upon the marsh habitat, although there	No specific mitigation is considered necessary other than to clearly demarcate the access and to ensure no inadvertent access to this area is made.	Negligible Negative	Neutral Not Significant	Not Significant
Invasive Plant Species; (Himalayan balsam, Japanese knotweed and	Himalayan balsam and Japanese knotweed have been identified at locations within and close to the Application Boundary. Giant hogweed, although not	Disturbance and spread of invasive plant material during construction phase (e.g. excavations, movement of	Section 10 of the CoCP (Document 7.5) sets out a series of measures which will ensure that best practice guidelines for the management and control of invasive plant species; Environment Agency The Knotweed Code of Practice, July 2013 (Ref 9.60) and Environment Agency Managing invasive non-native	No Change Permanent	Neutral Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
aquatic invasive plants) (All Sections)	specifically recorded within the Application Boundary may also be present. Not applicable	machinery).	<p>plants in or near fresh water, July 2010 (Ref 9.61) will be adopted. These measures will ensure that invasive plant species are not spread when constructing the Pipeline:</p> <p>Pre-construction surveys will be undertaken by an appropriately qualified Environmental Advisor or appointed invasive species contractor to mark out contaminated areas and measures will be undertaken to avoid or remove invasive plant species;</p> <p>Method statements will be prepared including the following measures to prevent the spread of these species if works occur within 5 m of Himalayan balsam and 10 m of Japanese knotweed (located either within or outside of the Application Boundary);</p> <p>Fencing with signage will be installed to prevent workers from entering the contaminated area;</p> <p>No equipment or materials will be stored in the contaminated area and no vehicles with caterpillar tracks will work within contaminated areas;</p> <p>Contaminated soils will be carefully excavated and disposed of correctly in accordance with the legal waste management requirements;</p> <p>Machinery or equipment (including work boots) that could be contaminated will be cleaned before leaving the area;</p> <p>If Himalayan balsam is identified within the Application Boundary during site clearance, the plants or soil containing the plant or its seeds will be removed from the site and disposed of at an approved disposal site. It will not be stored or used in any other areas of the site. The control of Himalayan balsam during construction operations will be covered in the CoCP; and</p> <p>Adhere to method statements for treating invasive species and immediately report any new stands of invasive species on Schedule 9 including Himalayan</p>			

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
			balsam and Japanese knotweed identified throughout the construction period..			
Species/Species Group						
Badger (All Sections)	Setts and activity recorded throughout (Sett location information withheld) Local	Temporary disturbance of badgers occupying a sett	Where practicable detailed routing will be used to ensure that a 30 m buffer zone will be applied to all active badger setts to prevent disturbance of a badger whilst occupying a sett. Other mitigation methods will be in place, including minimising the duration of work within the vicinity of the sett, minimising personnel within the area, storing chemicals away from setts, planning of the works to minimise the need for night time working in the vicinity and avoiding undertaking works likely to cause most disturbance in the 'closed season' between November and July (where reasonably practicable).	Minor Negative Temporary	Negligible Adverse Not Significant	Not Significant
		Temporary severance of habitat and general disturbance during construction	Mitigation to minimise this effect will include; providing a means of escape from any trenches left open overnight within areas of known badger activity; allowing continued access along badger paths, where practical. For example in arable areas the working width will only be fenced with demarcation fencing (rope and stakes), therefore badger will be able to easily move around in such areas whilst works are not occurring; storing chemicals away from setts; lighting where required on site will be directed away from setts; and daylight working hours only (except at certain crossings and for certain operations where 24 hours working is required).	Minor Negative Short-term	Slight Adverse Not Significant	Not Significant
		Direct effects (damage/destruction) upon an active badger sett	Pre-construction badger surveys will be undertaken to update the survey for each section prior to commencing on site in order to ascertain if there have been any changes in the extent, location and activity	Minor Negative Permanent	Slight Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
			<p>status of badger setts located within/within proximity to the Pipeline Envelope.</p> <p>Where practicable during detailed design the Pipeline will be routed to ensure that at least a 30 m buffer zone will be applied to all active badger setts to prevent damage to a badger sett. If it is not possible to re-route the Pipeline to avoid active badger setts, a Natural England derogation licence will be obtained to fully or partially close the sett before works are undertaken and where necessary an artificial sett provided prior to closure of the active sett. This mitigation measure is outlined in the event that the distribution of badger setts changes following the pre-construction surveys such that a badger derogation licence to allow a temporary sett closure is required.</p>			
Bats – Roosting (All Sections)	<p>Fifteen bat roosts are located within trees in the Pipeline Envelope.</p> <p>All are non breeding roosts of 1 or 2 individual bats. Two of these roosts may be directly affected by the Onshore Scheme.</p> <p>Seven of the 15 roosts are located within FDA's across all four Onshore Scheme Sections.</p> <p>County</p>	Direct effect on bats and bat roosts	<p>During detailed design the Pipeline route within the Pipeline Envelope will be refined with a commitment to retain 13 trees that are known to support a bat roost. For the 2 trees where pruning maybe required measures will be undertaken to address the potential effect upon roosting bats. If it is deemed that significant pruning is required which could result in a direct risk or effect to the roost a licence will be obtain from Natural England prior to any works being carried out on the tree. Every effort will be made to ensure the roost site can remain in situ and the pruning work is only minor. In the event that the tree requires significant pruning or worst case felling the method statement for the licence will include the incorporation of measures to ensure the replacement or an alternative roost site is provided in the form of bat boxes prior to exclusion and removal of the known roost.</p>	Minor Negative Permanent	Slight Adverse Not Significant	Not Significant
		Loss of potential roosting features	<p>During detailed design the Pipeline route within the Pipeline Envelope will be refined and trees that have been identified as having potential to support roosting</p>	Minor Negative Permanent	Slight Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
			<p>bats; in particularly Moderate and High potential (as shown on Figure 3 of Document 6.9.6), will be avoided as detailed in Section 10 of the CoCP (Document 7.5).</p> <p>Where removal of Moderate or High potential trees cannot be avoided by the Pipeline construction working width and need to be removed, preconstruction surveys will be carried out to re-assess the status of roosting bats, Pre- construction surveys for protected species, in particular for European Protected Species including bats, are secured through Schedule 3 Requirements (Document 3.1) and measures outlined in Section 10 of the CoCP (Document 7.5).</p> <p>In the event that pre construction bat surveys conclude that trees may have potential to support hibernating bats or are inconclusive, as a precautionary approach felling or pruning work on Moderate and High potential bat roost trees will be carried out under supervision of a licensed bat worker, using best practice techniques to avoid harming bats. Any Moderate or High potential bat tree will be removed during winter months subject to the completion of the pre construction surveys in the year prior to the start of the main construction period. If bats are discovered at any times during works, a licensed bat worker is therefore present on site to be able to handle bats. Felling/pruning work on the tree will be stopped and advice sought from Natural England. Where any Low risk potential trees (as shown on Figure 3 of Document 6.9.6), need to be removed these would be soft-felled in accordance with Bat Conservation Trust Guidance (Ref 9.34).</p> <p>Bat roost boxes would be placed on adjacent suitable trees within the Pipeline Envelope where required i.e. as part of licensed bat works or where temporary or permanent exclusions may be required. These measures as outlined in the CoCP (Document 7.5).</p>			

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
		Disturbance of bats whilst occupying a roost	Where tree roosts will be retained, a buffer zone will be placed around the tree to ensure that the tree is not affected during the works and to minimise disturbance to the roost. The tree will be demarcated with a protective fence to prevent encroachment and the fence will be retained through construction. Programming of works will aim to avoid night time working adjacent to known bat roost trees and it will be ensured that roost sites are not lit where night time working is required.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
Bats – Foraging and Commuting (All Sections)	The habitats located within the Application Boundary provide a foraging and commuting resource for 5 species of bat; - common and soprano pipistrelle, noctule, unconfirmed Myotis sp. and Daubenton's bats. Common and soprano pipistrelle bats were the commonest species recorded. Borough	Temporary loss of foraging and commuting habitat	Site clearance and construction, particularly the removal of hedgerows could cause temporary disturbance of bat flight lines and reduce the amount of feeding habitat in the short term, until replacement planting has matured. This would be mitigated for by minimising the area of hedgerow removed, and the prompt reinstatement of hedgerows in the planting season following construction. All trees 'at risk' of removal will be surveyed in accordance with BS 5837:2012 (Ref 9.54) and by a bat specialist (Section 10 within CoCP (Document 7.5)).	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
Water Vole (All Sections)	Water voles are widespread through the Study Area in all Sections. Forty-six watercourses were recorded as having water vole present or potentially present in the Study Area. A total of 32 crossings over 29 watercourses supporting water vole, will be crossed by	Temporary disturbance of water vole habitat during construction in adjacent areas	Bank side habitat would be re-instated and where agreed with the landowner enhanced for water vole. Where works are within vicinity of a watercourse (but will not cross the watercourse) known to support water vole and suitable water vole habitat, a 2 m (minimum) buffer zone will be maintained along the watercourse and the working area (storage of top soil or trench spoil). The area will be demarcated to prevent encroachment onto water vole habitat. A minimum of 5m will be maintained between the watercourse and	Minor Negative Short-term and Temporary	Slight Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
	the Pipeline. Regional		any deep excavations.			
		Direct killing and injury of water vole	<p>At watercourses known to support water vole where burrows have been identified which cannot be avoided by the pipeline works, the area of bank habitat disturbed by the works will be kept to the minimum practicable for safe working (maximum section of 13 m per watercourse to accommodate access, pipeline installation and drainage outfalls).</p> <p>As only a short section of habitat and small numbers of water vole would be affected by the works, it is considered appropriate to move water vole from the working area using relocation by displacement methods. This involves habitat manipulation to encourage water vole to vacate a section of watercourse, moving into adjacent unaffected habitat, followed by a careful destructive search as described below.</p> <p>Water voles would be displaced using the methodology outlined in the Water Vole Conservation Handbook (Ref 9.36). The mitigation strategy for water vole will be agreed through consultation with Natural England and EA as set out in the CoCP (Document 7.5).</p> <p>Where possible works will proceed immediately following a period of stimming followed by a destructive search. Where there may be delays between initial stimming and the completion of crossing work, stimming and inspections will be repeated periodically until works are commenced,</p> <p>Destructive searches (as described in Box 9:C of the Water Vole Conservation Handbook (9.36), will be only</p>	No Change Permanent	Neutral Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
			<p>undertaken as the very last stage of mitigation and involve a close inspection of bank habitat following a programme of strimming, and ideally following the exclusion of water from the affected section of watercourse. The search includes careful excavation of (non active) burrows using hand tools, and removal of habitat.</p> <p>Affected areas would be re-instated on completion of the crossing works which would provide suitable habitat for water vole to burrow into.</p>			
		Temporary disturbance of water vole whilst occupying a burrow	<p>Preconstruction surveys will be carried out to re-assess and determine status of water vole on all watercourses previously identified as being suitable to support water vole and which will be open cut crossings. Where possible the Pipeline will be located within the Pipeline Envelope to cross the watercourse at locations where there is lower quality water vole habitat, therefore affecting fewer animals.</p> <p>Burrows within the affected area would be removed following habitat manipulation and a destructive search. The displacement area would include the area to be directly affected by the works as well as an appropriate buffer to ensure that burrows adjacent to the works are not incidentally damaged. The retained habitat adjacent to the working area will be demarcated to prevent encroachment. Works would be completed in as short a time as possible to minimise the period of activity in the area. As detailed in Chapter 3: Onshore Scheme Description (Document 6.3), subject to crossing method used this timescale will be between 1 week for minor open cut watercourses up to 3 weeks maximum for non open cut crossings. The majority of sites where water vole are present are the main field</p>	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
			drain such as Lendall Drain and Carr Dyke Drain which will be non open cut crossings.			
		Temporary loss of bank side and marginal/aquatic habitat and loss of water vole burrows	The working area at watercourses known to support water vole will be kept to the minimum necessary to allow plant and vehicles safe operation and access which will be approximately 13 m wide. The affected habitat within the working width will be re-instated as soon as possible following construction to minimise the time that the habitat is not available to water vole. Bank side grassland habitat will be re-seeded and plant species which are favoured by water vole e.g. rushes, sedges or reed will be included in the seed mix or supplemented by re-instatement of removed turves or bank side top soil immediately following completion of the works	Minor Negative Short-term	Slight Adverse Not Significant	Not Significant
		Temporary severance of water vole habitat	At watercourses known to support water vole, crossing works will be undertaken as soon as possible after the destructive search has been completed and the section of ditch has been successfully excluded. Areas will be promptly re-instated following construction, allowing water vole access to the affected area. The working period at each crossing will be kept to a minimum but as described in Chapter 3: Onshore Scheme Description (Document 6.3) will be dependent on the crossing method used.	Minor Negative Short-term	Slight Adverse Not Significant	Not Significant
Otter (All Sections)	Otters were identified on a number of rivers/drains located within the Study Area,	Direct effects on otter holts/couch sites	All main rivers which have been identified to support otter will be crossed by the Pipeline using non open cut methods, thus reducing risk of this effect occurring.	No Change	Neutral Not Significant	

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
	including the River Ouse, Foulness and Hull catchments, Carr Dike, Lendall Drain and Foston Beck. Regional		<p>However construction access will be required across a number of these watercourses. Where construction access crossings of watercourses are required and where otter have been identified previously (or have potential to support otter) (Table 24) pre-construction otter surveys will be undertaken to inform detailed design to avoid habitat suitable to support otter holt sites. .</p> <p>Where practicable mature trees located on the banks of watercourses will be avoided by careful routing of the Pipeline within the Pipeline Envelope and the area of riparian habitat that will be temporarily disturbed to construct the Pipeline will be kept to a minimum. The sections to be affected will be fenced to delineate the working area and to prevent damage to the surrounding banks.</p>			Neutral Not Significant
		Temporary loss of riparian habitat	<p>To minimise the effect of the loss of riparian otter habitat, the working width at open cut watercourse crossings which are confirmed to support otter will be kept to the minimum required for safe working practice and will be clearly marked to prevent encroachment.</p> <p>On completion of the works, the bank side habitat would be re-instated. Areas of grassland will be reseeded with an appropriate grass mix, whilst the marginal zone will be left to colonise naturally.</p> <p>For non-open cut crossings construction access is required such as, Kelk Beck, the area of bank habitat disturbed by the works will be kept to the minimum practicable for safe working. Once works are complete the construction access will be removed and the habitat will be reinstated.</p>	Negligible Negative Short-term	Negligible Adverse Not Significant	Not Significant
		Temporary disturbance of otter due to construction activities close to	As otter is mainly nocturnal, mitigation measures will focus on restriction of night time working in proximity to known otter habitat, to avoid disturbance to otter moving throughout their territory and the maintenance	Minor Negative Temporary	Slight Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
		watercourses	<p>of barrier free movement. Where night time working is required at river crossings where non-open cut techniques are used, the works will be positioned as far away from watercourses as is practical to do so. The working area for the non-open cut crossing methods will be located more than 7 m from the river bank in areas of known otter habitat.</p> <p>Lighting, where required on site, will be directed away from known otter habitats. A screen to provide a visual barrier between the works and the river will be placed along the riverward side of the working area.</p> <p>Site compounds and storage or waste storage facilities will be located away from otter habitat and night working would be avoided where reasonably practicable in areas where otters are active (including at dawn and dusk).</p>			
		Effect on food source for otter	<p>Throughout construction and operation, adequate pollution prevention measures will be put in place as detailed in Section 8 of Chapter 6; Water Resources and Flood Risk (Document 6.6). These measures are outlined in the CoCP (Section 9, Document 7.5) and secured through Requirements in Schedule 3 of the draft DCO (Document 3.1). Measures will be implemented with reference to PPG5 and will minimise effects on fish; the otters' main food supply.</p>	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
Great Crested Newt (Camblesforth Multi-junction to Tollingham Block Valve and Tollingham Block Valve to	<p>There are 4 distinct populations of GCN located within 250m of the Application Boundary (comprising of 14 positive GCN ponds).</p> <p>These are located at Newsholme, Brind, Spaldington, and Tollingham</p>	Temporary partial disturbance to great crested newt non breeding aquatic habitat – Brind population	<p>The drain habitat at Brind that will be directly affected is not considered to be used for breeding with only a very small number of juvenile great crested newt recorded within it. Other confirmed breeding ponds are located outside the Pipeline Envelope and will not be directly affected. However if practicable the crossing of this drain adjacent to Brind Lane will be by non-open cut method to minimise effects on non breeding aquatic habitat and the working areas will be within arable fields to minimise the effect on optimal great</p>	Minor Negative Short-term	Slight Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
Dalton Block Valve Sections)	which are predominantly located within the Camblesforth Multi-junction to Tollingham Block Valve Section. The Tollingham population extends slightly further north into the Tollingham Block Valve to Dalton Block Valve Section. County		crested newt terrestrial habitat. If this is not possible, newts would be excluded from the working area under a Natural England development licence; as part of the wider licensable works. The drain will be culverted to allow great crested newts access along the drain therefore no severance between ponds will occur. As this will result in only temporary disturbance to non-breeding aquatic habitat it is not considered necessary to provide replacement aquatic habitat as suitable aquatic habitat will be retained within the vicinity of the affected area and the drain will be re-instated on completion of the works.			
		Temporary partial loss of great crested newt terrestrial habitat	To minimise the effect on great crested newt terrestrial habitat, the working width, where it crosses optimal newt habitat (i.e. hedgerows, drains, semi-improved grassland) within 250 m of a known great crested newt breeding pond, will be kept to the minimum required for safe working practice and will be clearly marked to prevent encroachment. Prompt re-instatement of habitat would be undertaken in the appropriate season following construction. Areas of grassland will be reseeded with an appropriate grass mix in agreement with the landowner and hedgerows would be re-planted.	Negligible Negative Short-term	Negligible Adverse Not Significant	Not Significant
		Increased risk of mortality and injury of great crested newt present within aquatic and terrestrial habitat.	Newts will be excluded from the working area under a Natural England EPS development licence. The mitigation strategy will be developed following guidance within the Great Crested Newt Mitigation Guidelines (Ref 9.40). A draft version of this licence has been produced in accordance with NSIP licensing guidance and submitted to Natural England.	No Change	Neutral Not Significant	Not Significant
		Indirect disturbance during construction due to temporary	The likely construction period for the Pipeline in areas within which GCN are present is between April and September inclusive. This is conducive to when newts	Minor Negative Short-term	Slight Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
		severance of habitat.	will be active and will be travelling to and within breeding ponds (subject to temperatures). Under provision of a NE licence construction works within 250 m of a great crested newt breeding pond will be programmed so that the works will commence when newts are moving to breeding ponds. The timing of works in association with translocation measures (e.g. installation of fencing and trapping out) will only be undertaken when temperatures allow but will aim to be implemented to tie in with the natural life cycle of newts. Habitats will be re-instated and amphibian exclusion fencing removed as soon as construction is complete (within 1 year) in these areas to allow free movement of newts throughout their home range.			
Reptiles (Grass snake) (All Sections)	Grass snake was found to be present in three of the ten areas which were subject to detailed survey, all of which are located within the Camblesforth Multi-junction to Tollingham Block Valve Section. Furthermore small populations of common species of reptiles; grass snake and common lizard could be present throughout the Onshore Scheme area. Local	Increased risk of mortality and injury of grass snake	In any areas with high risk of encountering grass snake such as along the field drains and hedgerows within the vicinity of known grass snake populations two stage strimming of vegetation, watching briefs and hand searches will be employed as necessary. Where strimming may be required within the working width on drains where water vole is present the area of strimming for both species will be limited to 13 m. Where water vole are not identified at drain crossings, habitat suitable for grass snake in these areas will be strimmed within the entire working width to encourage grass snake to move away from these areas, as they would no longer provide shelter or refuge. If a grass snake is discovered within the working width, where it is at risk or injury it will be captured by a suitably experienced ecologist and moved to an area of suitable habitat located outside of the working width but within the Application Boundary.	No Change	Neutral Not Significant	Not Significant
		Temporary loss of and severance of foraging and shelter	Prompt re-instatement of habitat would be undertaken in the appropriate season following construction. Areas of grassland will be reseeded with an	Negligible Negative Short-term	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
		habitat	appropriate grass mix in agreement with the landowner and hedgerows would be re-planted.			
		Temporary disturbance during construction	Areas of suitable grass snake habitat that will not be affected by the works will be fenced to prevent encroachment. Pollution prevention measures as outlined previously for effects upon watercourses and detailed in Section 8 of Chapter 6: Water Resources and Flood Risk (Document 6.6) will reduce the risk of polluting aquatic habitat which could be utilised by grass snake.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
Fish (and spawning habitats) (All Sections)	The River Ouse; (Camblesforth Multi-junction to Tollingham Block Valve) is a Salmonid river, and is a protected fish migratory route for a number of species of conservation concern. The River Hull and associated Kelk Beck, whilst not a designating feature of the River Hull Headwaters SSSI, is known to support breeding brook lamprey, river lamprey, bullhead and wild grayling. A number of other watercourses are designated under The Water Framework Directive (as detailed in Table 26) and support known populations of fish. Borough	Reduction in water quality due to accidental spillages, silt laden run-off and dust and indirect effect upon fish.	Construction work will be undertaken in accordance with appropriate method statements, the CoCP, and consents / licences obtained from environmental regulators. Good practice has been adopted in accordance with CIRIA and EA Pollution Prevention Guidance as detailed in Section 6.9 Water Resources. These include measures to ensure the avoidance of siltation, run off, pollution incidents, effects to water flow or quality during construction and also as a result of drainage works within the FDA's.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
		Effect of construction activity adjacent to main migratory watercourses	All main salmonid and WFD watercourses as detailed in Table 26 will be crossed using non open cut methods. Light usage alongside main and WFD rivers where non open (and open) cut techniques will be undertaken will be limited to times when it is required for health and safety purposes. Lighting will be directional and any light spillage will avoid illumination of the watercourse and banks.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
Brown Hare (All Sections)	Brown hare have been recorded within the Application Boundary during the completion of other surveys, particularly within areas with large open arable fields such as around the River Ouse, Spaldington, and on the Wolds. Local	Temporary loss of brown hare habitat during construction	No specific mitigation measures are proposed for brown hare. However the adoption of measures as outlined in the CoCP (Document 7.5) for ecological species receptors during the construction phase will mitigate this effect. Prompt reinstatement of habitats following construction of the AGI site, including creation of hedge, scrub and grassland habitats, will also ensure the magnitude of these effects is no more than minor even in the absence of specific additional brown hare mitigation measures.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
		Disturbance to brown hare during construction.	No specific mitigation measures are proposed for brown hare. Disturbance will be temporary and restricted to distinct working areas. Brown hare are likely to be able to tolerate the short term construction disturbance be able to relocate to other suitable habitats within the vicinity and outside the working area.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
Grey and harbour seal	Limited use is made of the section of coast in proximity to the Onshore Scheme landfall, and there are no haul out areas; the nearest being at Donna Nook, around 70km to the south of the landfall. Less than Local	Disturbance of seals from piling noise during the construction of the cofferdam on the beach.	Based upon the assessment of this effect, no specific mitigation measures are considered necessary. The majority of the piling activity will be in the intertidal zone, and the landfall area is not recognised as a seal haulout site. With regards to sub tidal activities, experience from shallow water piling (Ref 9.65) has indicated that sound pressure levels were lower than the injury criteria proposed in Southall et al (Ref 9.63), even at close proximity to the piling location, with a conservative estimate of distance to the 160dB isopleths at 50 m for vibropiling and 350m for impact pile driving.	Minor Negative Temporary	Slight Adverse Not Significant	Not Significant
Ornithological receptors						
Non-breeding Humber Estuary SPA Qualifying Species –	Third party records and AECOM surveys demonstrate presence in the wider area around the Humber Estuary	Temporary loss of habitat	Construction will be restricted to the period from April to September, which will avoid the wintering bird period of October to March, when the larger winter assemblages are reliant upon farmland surrounding	No Change	Neutral Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
Golden Plover and Lapwing (All Sections)	SPA in winter and spring. Records of relatively small numbers, widespread. Regional		the Humber Estuary. Restricting access into wintering bird habitat will reduce potential effects on such species. Strict adherence to construction working zones and fencing around zones.			
		Temporary disturbance	Strict adherence to construction working zones and fencing around zones Minimising and clearly demarcating working areas to restrict access into wintering bird habitat outside of the working areas will reduce potential effects on such species. Limiting the Pipeline construction season to April to September inclusive will avoid effects during the winter period.	No Change	Neutral Not Significant	Not Significant
BoCC Red Listed Farmland Bird Breeding Bird Assemblage (All Sections)	Widespread distribution and moderate numbers for most species (including grey partridge, turtle dove, spotted flycatcher, marsh tit, lapwing, skylark, tree sparrow, linnet, starling, yellowhammer, corn bunting). Restricted distribution and small numbers specifically for turtle dove, marsh tit, spotted flycatcher. Regional	Potential for destruction/damage of nests during Construction Period	Restricting site clearance/ground preparation to outside the breeding bird season. If works are carried out within or close to the breeding season a suitably experienced and qualified ecologist will be present on site to check the working area before works commence. If nests are discovered, appropriate mitigation will be implemented to ensure that they are not destroyed before any works can commence in that area of the site. This may include observing an appropriate stand-off or imposing exclusion zones between the works and the nest(s). Ground nesting species may be dissuaded from nesting in construction/site access routes by removing the surface vegetation from the desired area before the breeding season commences. Where this not possible bird deterrent measures will be deployed to deter birds from nesting, followed by the completion of a pre works survey to check for presence of nests.	No Change	Neutral Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
		Temporary loss of nesting and foraging habitat	Site clearance/ground preparation will be undertaken outside the breeding bird season. Habitat disturbed during the works will be reinstated following completion.	Minor Negative Temporary	Slight Adverse Not Significant	Not Significant
		Temporary disturbance of breeding birds	Site clearance/ground preparation will be undertaken outside the breeding bird season to prevent disturbance effects on breeding birds. An Environmental Advisor/Ecological Clerk of Works (ECoW) will be appointed to monitor construction operations during the breeding bird season. If Schedule 1 species are found breeding within the working area, works will stop immediately and Natural England advised. An assessment will then be undertaken to determine if the continuation of works warrants the requirement for a Schedule 1 disturbance licence.	No Change	Neutral Not Significant	Not Significant
BoCC Red Listed Farmland Bird Wintering Bird Assemblage (All Sections)	Most species widespread (including Lapwing, Tree Sparrow, House Sparrow, Lesser Redpoll, Skylark, Fieldfare, Redwing, Yellowhammer, Starling, Grey Partridge, Linnet, Marsh Tit, Song Thrush), with variable but generally good populations of skylark, fieldfare, redwing, lapwing and starling. Regional	Temporary loss of foraging and roosting habitat	Strict adherence to construction working zones and fencing around zones. Restricting access into wintering bird habitat will reduce potential effects on such species	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
		Temporary disturbance	Strict adherence to construction working zones and fencing around zones. Restricting access into wintering bird habitat will reduce the potential effects on such species.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
Schedule 1 species (Barn	These species are known to occur in the Application	Potential for destruction/damage	Restrict site clearance/ground preparation to outside the breeding bird season.	No Change	Neutral Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
Owl, Red Kite, Marsh Harrier, Kingfisher and Quail)	Boundary and local area – specific nest site locations not provided or are confidential. Regional	to nests	ECoW to advise on detailed routing of the Pipeline to avoid clearance of trees which have potential to support nest or roost sites for Schedule 1 species; particularly barn owl or red kite.			
		Temporary loss of foraging habitat	Strict adherence to construction working areas and plant/vehicle access areas. Habitat disturbed will be reinstated following completion.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
		Temporary disturbance	Restrict site clearance/ground preparation to outside the breeding season ECoW to supervise operations during the construction phase and monitor Schedule 1 species breeding within and adjacent to the working area. Works will stop if Schedule 1 species are found to be breeding in an area where they could be disturbed and Natural England advised.	No Change	Neutral Not Significant	Not Significant
Wetland Birds associated with Kelk Beck (Skerne Block Valve Site to Barmston Pumping Station including Barmston Pumping Station to MLWS)	A reasonably diverse assemblage of wetland birds associated with Kelk Beck, including dabbling and diving ducks (e.g. mallard, teal, tufted duck, widgeon), waders (e.g. lapwing, golden plover and redshank), gulls (common gull), coot, moorhen, heron, greylag goose and mute swan. Borough	Potential for destruction/damage to nests or other habitats relied upon for roosting	Strict adherence to construction working areas and plant/vehicle access areas. Installation at the watercourse crossing will be by a non – open cut method and therefore there will be virtually no effect on riverine and riparian habitat.	No change	Neutral Not Significant	Not Significant
		Temporary loss of foraging habitat	Strict adherence to construction working areas and plant/vehicle access areas. Habitat disturbed will be reinstated following completion. Installation of the pipeline will be by non – open cut method and therefore there will be no effect on open water or riparian habitat.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
		Temporary disturbance	Strict adherence to construction working zones and fencing around zones. Restricting access into wintering bird habitat will reduce the potential effects on such species	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
Waterfowl (including	Key species are shorebirds / waders including grey plover	Temporary loss of habitat	Strict adherence to construction working areas and plant/vehicle access areas. Habitat disturbed will be	Negligible Negative	Negligible Adverse	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
waders) associated with the inter-tidal coastal habitat near Barmston. (Skerne Block Valve Site to Barmston Pumping Station including Barmston Pumping Station to MLWS)	(peak count 30), lapwing (peak count 138), sanderling (peak count 144), turnstone (peak count 37), oystercatcher (peak count 120) and ringed plover (peak count 17) feeding opportunistically on intertidal sands. A high tide wader roost was observed on several occasions at the mouth of Earls Dike at the coast. Small numbers of waders and gulls frequently use the coastal fields north of Barmston village. Regional		reinstated following completion.	Temporary	Not Significant	
		Temporary disturbance	All works will be undertaken outside the wintering bird season (1 st October- 31 March). Construction activities will be modified on an ad hoc basis during conditions of poor weather that place birds under sustained and severe metabolic stress (such as severe storm conditions that prevent feeding activity and force birds to roost, or spells of extremely cold weather). The timing and modifications to construction activity will be agreed between the ECoW and the contractor.	Minor Negative Temporary	Slight Adverse Not Significant	Not Significant
Sand Martin Colony associated with the coastal cliffs adjacent to Barmston. (Skerne Block Valve Site to Barmston Pumping Station including Barmston Pumping Station to MLWS)	Two active sand martin colonies, the largest (approximately 150 active holes) is located within the cliff face between Earl's Dike and Hamilton Hill; smallest within the cliff face directly below Barmston Beach Caravan Park. Borough	Potential for destruction/damage to nests	Sand martin nesting habitat located within the Application Boundary will be excluded for one nesting season. Exclusion measures will be installed between October and end February to ensure they are in place prior to the nesting season. Exclusion measures to be adopted will be in the form of preventative barrier such as netting or mesh over the area of cliff/bank face to prevent bird access nest holes or creating new nest sites. The exclusion measures will be periodically monitored by the Environmental Advisor/Ecological Clerk of Works (ECoW) during the construction period, and will remain in place until at least the end of August in order to continue to ensure no nests are established within the working area.	No Change	Neutral Not Significant	Not Significant
		Temporary loss of nesting and foraging habitat	No specific mitigation is proposed to address this effect. However the area of suitable habitat available for sand martin nesting at the coast are considered sufficiently greater in area than the area which will be temporarily excluded for nesting for one nesting	Minor Negative Temporary	Slight Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
			season. Soft cliff habitat is present outside the Application Boundary and thus would not be expected to have a significant effect on the overall availability of habitat available for nesting sand martin. The exclusion measures will not remain in place for longer than one nesting season. The soft cliff habitat will be reinstated and profiled following completion of construction activities.			
		Temporary disturbance	Strict adherence to construction working areas ensuring a 50 m buffer area from the nest sites on the coastal cliffs.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
All other species (Breeding and Wintering populations) (All Sections)	Widespread and reasonably frequent occurrences of broadly common species (Amber and Green List) typical of habitats present Local	Potential for destruction/damage to nests (Breeding only)	To reduce the potential for destruction or damage of nests/eggs/dependent young during the construction phase, site clearance and construction activities will begin outside the breeding season (typically March-August for most species). This will avoid contravention of the Wildlife and Countryside Act 1981 (as amended) by preventing destruction, damage and disturbance of established nests. If works are carried out within or close to the breeding season a suitably experienced and qualified ecologist will be present on site to check the working area before works commence. If nests are discovered, appropriate mitigation will be implemented to ensure that they are not destroyed before any works can commence in that area of the site. Ground nesting species may be dissuaded from nesting in construction/site access routes by removing the surface vegetation from the desired area before the breeding season commences. Where this not possible bird deterrent measures will be deployed to deter birds from nesting, followed by the completion of a pre works survey to check for presence of nests.	No Change	Neutral Not Significant	Not Significant
		Temporary loss of habitat	Habitat disturbed during the works will be reinstated following completion.	Minor Negative	Negligible Adverse	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
			These mitigation measures will maintain favourable habitat for breeding bird species of Regional value in the long term (however there is a level of uncertainty when predicting this residual effect in the short-medium term)	Temporary	Not Significant	
		Temporary disturbance	Site clearance/ground preparation will be undertaken outside the breeding bird season. Commencing site clearance/ground preparation outside the breeding bird season will prevent disturbance effects on breeding birds	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
Construction Compounds						
Breeding Birds (Tollingham and Driffield)	Based upon habitat types, location and records breeding bird assemblage at these sites are likely to comprise broadly common and widespread species. Local	All effects as described for the Pipeline Envelope above.	The mitigation for breeding birds at the construction compounds is as per that described for the Pipeline Envelope as detailed above.	As detailed above	As detailed above	As detailed above
Arable (Tollingham Construction Compound)	Approximately 7.6 ha of the Tollingham Construction Compound comprises arable habitat. Local	Temporary loss of arable habitat	Similarly to the measures adopted for the loss of arable habitat within the Pipeline Envelope described in Section 8.2 above, measures to address the effect of temporary loss of arable present at the Tollingham Compound will include: Topsoil will be removed carefully and stored separately from the sub-soil horizons. Soil will be stored in piles no greater than 4 m high, away from other materials and from compound area. Once the Construction Compound is demobilised, the excavated soil horizons will be replaced in the correct sequence and the area then contoured to previous profiles and returned to arable cultivation.	Negligible Negative Short-term	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
Unimproved grassland , scrub and ruderal habitat (Driffield Construction Compound)	An area 5 ha of grassland classified as unimproved grassland and scattered scrub and ruderal habitat is present at Driffield Construction Compound. Local	Temporary loss of grassland, scrub and ruderal habitat.	The extent of the grassland, scrub and ruderal habitat removal will be kept to a minimum required to facilitate the use of the site as a Construction Compound. Where areas of the site are not to form part of the compound these will be demarcated, not removed and retained on site. Following the demobilisation of the site as a Construction Compound, it will be re-instated to grassland, subject to the future use of the site and landowner's agreement.	Negligible Negative Short-term	Negligible Adverse Not Significant	Not Significant
Reptile Habitat (Driffield Construction Compound)	Suitable reptile habitat is present throughout the Driffield Construction Compound. Local	Temporary loss of and severance of foraging and shelter habitat	Prompt re-instatement of habitat would be undertaken in the appropriate season following construction. Areas of grassland will be reseeded with an appropriate grass mix and hedgerows would be re-planted.	Negligible Negative Short-term	Negligible Adverse Not Significant	Not Significant
		Temporary disturbance during construction	Areas of suitable grass snake habitat that will not be affected by the works will be fenced to prevent encroachment. Pollution prevention measures as outlined in Chapter 6: Water Resources and Flood Risk (Document 6.6) and secured through their inclusion in the CoCP (Document 7.5) will reduce the risk of polluting aquatic habitat which could be utilised by grass snake.	Negligible Negative Short-term	Negligible Adverse Not Significant	Not Significant
		Increased risk of mortality and injury of reptiles.	Where suitable reptile habitat is to be affected, a pre-construction reptile survey will be undertaken at the Driffield Construction Compound to fully determine the status of reptiles. This will be undertaken in accordance with current recommended methodologies and will be conducted in the season/year (optimum period March-May or August to October subject to weather conditions) prior to the initial use/clearance of the site. Subject to the outcome of the preconstruction reptile survey, appropriate habitat mitigation measures will be undertaken to avoid direct killing and injury of reptiles. This would include two stage strimming of vegetation,	No Change	Neutral Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
			<p>watching briefs and hand searches will be employed in any areas with high risk of encountering grass snake such as along the field drains and hedgerows within the vicinity of known reptile populations. If reptiles are encountered within the working area, where necessary these will be captured by a suitably trained ecologist and relocated to neighbouring suitable reptile habitat located outside of the working area but within the Application Boundary. Any refugia items that could potentially be utilised by grass snake (such as logs, large rocks and metal sheeting) will be checked by an ecologist prior to removal where informed by the pre-construction survey..This would include two stage strimming of vegetation, watching briefs and hand searches will be employed in any areas with high risk of encountering grass snake such as along the field drains and hedgerows within the vicinity of known reptile populations. If reptiles are encountered within the working area, where necessary these will be captured by a suitably trained ecologist and relocated to neighbouring suitable reptile habitat located outside of the working area but within the Application Boundary.</p> <p>Any refugia items that could potentially be utilised by grass snake (such as logs, large rocks and metal sheeting) will be checked prior to removal by an ecologist.</p>			
<p>Bats - Potential Roosting Habitat</p> <p>(Driffield Construction Compound)</p>	<p>Three trees located at the entrance to the site and two small existing buildings have been assessed as providing Low potential to support roosting bats.</p> <p>Borough</p>	<p>Direct effect on bats and bat roosts</p>	<p>Preconstruction bat surveys will be carried out to re-assess all trees previously identified as being suitable to support roosting bats (three with Low potential) located at the entrance to the site, and which may need to be removed or require tree works to create an improved safe access to the Compound. Furthermore a re-assessment (and survey as required) will be undertaken of the two buildings with Low potential to support roosting bats in the event these require</p>	<p>Minor Negative Temporary</p>	<p>Negligible Adverse Not Significant</p>	<p>Not Significant</p>

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
			demolition. In the event that a bat roost is identified, the removal of the roost tree/building will be avoided wherever possible to avoid direct effects upon a bat roost. Where the identified roost cannot be retained in situ, a licence application will be prepared and submitted to Natural England along with a method statement to outline measures to which would need to include measures as detailed previously (for the Pipeline Envelope) and would need to be agreed and supervised by a licensed bat ecologist.			
		Loss of potential roosting features	Trees present on the perimeter of the site will be retained. Alternative roosting habitat is abundant locally to the site with residential buildings and matures trees present which will compensate for the reduction in potential roosting features provided by two Low potential roosting buildings and three low potential trees. As such no specific measures are proposed.	Minor Negative Temporary	Negligible Adverse Not Significant	Not Significant
		Temporary loss of foraging and commuting habitat	Site clearance and increased noise and lighting disturbance associated with the use of the site as an operational Construction Compound, could result in temporary disturbance of bat flight lines and reduce the amount of feeding habitat. The site currently is subject to very low levels of disturbance. However the majority of the features which could be used for foraging and commuting by bats at the site; i.e. lines of mature trees on the southern and northern boundaries will be retained. As detailed in Section 10 of the CoCP (Document 7.5), where possible, lighting will be restricted to only periods when necessary for safety and security lighting and will be directed away from areas of retained trees and grassland to reduce the disturbance effects on bat habitat.	Minor Negative Temporary	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
Brown Hare (Tollingham Construction Compound)	Brown hare have been recorded within habitat within proximity to Tollingham Construction Compound. The habitat (arable) within the Tollingham Construction Compound is suitable for use by this species. Local	Temporary loss of brown hare habitat	No specific mitigation measures are proposed for brown hare. However the adoption of measures as outlined in the CoCP (Document 7.5) for ecological species receptors during the construction phase will mitigate this effect. Prompt reinstatement of habitats following the construction period and its return to arable, will ensure the magnitude of this effect is no more than minor even in the absence of specific additional brown hare mitigation measures.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
		Disturbance to brown hare during construction	No specific mitigation measures are proposed for brown hare. Disturbance will be temporary and restricted to a distinct area for the construction compound. Brown hare are likely to be able to tolerate the short term construction disturbance be able to relocate to other suitable habitats within the vicinity of the compound.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
Flexible Drainage Areas						
Invasive Plant Species; Himalayan balsam and Japanese knotweed (All Sections)	Whilst no specific stands have been recorded within the Flexible Drainage Areas, based upon the present of Himalayan balsam and Japanese knotweed within the Application Boundary there is potential for invasive plant species to be present in these areas.	Temporary disturbance and spread of invasive plant material during construction phase (e.g. excavations, movement of machinery)	Measures will be in place to prevent the spread of Section 10 of the CoCP (Document 7.5) sets out a series of measures which will ensure that best practice guidelines for the management and control of invasive plant species; Environment Agency The Knotweed Code of Practice, July 2013 (Ref 9.60) and Environment Agency Managing invasive non-native plants in or near fresh water, July 2010 (Ref 9.61) will be adopted. These measures will ensure that invasive plant species are not spread when constructing the Pipeline: Pre-construction surveys will be undertaken by an appropriately qualified Environmental Advisor or appointed invasive species contractor to mark out contaminated areas and measures will be undertaken to avoid or remove invasive plant species; Method statements will be prepared including the	No Change Permanent	Neutral Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
			<p>following measures to prevent the spread of these species if works occur within 5 m of Himalayan balsam and 10 m of Japanese knotweed (located either within or outside of the Application Boundary);</p> <p>Fencing with signage will be installed to prevent workers from entering the contaminated area;</p> <p>No equipment or materials will be stored in the contaminated area and no vehicles with caterpillar tracks will work within contaminated areas;</p> <p>Contaminated soils will be carefully excavated and disposed of correctly in accordance with the legal waste management requirements;</p> <p>Machinery or equipment (including work boots) that could be contaminated will be cleaned before leaving the area;</p> <p>If Himalayan balsam is identified within the Application Boundary during site clearance, the plants or soil containing the plant or its seeds will be removed from the site and disposed of at an approved disposal site. It will not be stored or used in any other areas of the site. The control of Himalayan balsam during construction operations will be covered in the CoCP; and</p> <p>Adhere to method statements for treating invasive species and immediately report any new stands of invasive species on Schedule 9 including Himalayan balsam and Japanese knotweed identified throughout the construction period..</p>			
<p>Great crested newt</p> <p>(Camblesforth Multi-junction to Tollingham Block Valve and</p>	<p>No great crested newt ponds are located within FDA's, however 7 are located within 250m of FDA's at Brind (around Brind Village Farm), Spaldington (adjacent to Featherbed Lane) and Tollingham (small area north</p>	<p>Partial temporary loss of small areas of great crested newt terrestrial habitat during completion of drainage work.</p>	<p>To minimise the effect on great crested newt terrestrial habitat, drainage works will avoid optimal newt habitat (i.e. hedgerows, drains, semi-improved grassland), within 250m of a known great crested newt breeding pond. Drains and suitable habitat within a radius of 100 m from the ponds will be entirely avoided for the completion of new drains and works to existing drains. A detailed method statement as part of a Natural</p>	<p>Negligible Negative Short-term</p>	<p>Slight Adverse Not Significant</p>	<p>Not Significant</p>

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
Tollingham Block Valve to Dalton Block Valve Sections)	of Skiff Lane) County (in combination with overall value assigned to GCN – see above)		England licence will be prepared for these areas which will take into account the intended drainage works. These areas will be included in extent of the fencing as part of the translocation works. Where drainage work does affect suitable terrestrial habitat this will be re-instated immediately following the completion of the drainage work. Areas of grassland will be reseeded with an appropriate grass mix in agreement with the landowner and hedgerows would be re-planted. Where agreed with the landowner, log piles could be created in areas of suitable habitat with arising from felled trees and scrub which would provide additional habitat for great crested newt.			
Water Vole (All Sections)	Across all four Scheme Sections there are 11 watercourses that were surveyed for water vole that are located entirely or partially within or adjacent to the FDA's. Regional	Temporary disturbance of water vole whilst occupying a burrow during drainage works	Burrows within the affected area would be removed following habitat manipulation and a destructive search. The displacement area would include the area to be directly affected by the works as well as an appropriate buffer to ensure that burrows adjacent the works are not incidentally damaged. The retained habitat adjacent the working area will be demarcated to prevent encroachment and works would be completed in these areas in as short a time as possible to minimise the period of activity in the area.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
		Direct effect on water vole and burrows during completion of drainage work	Preconstruction surveys will be carried out to check all watercourses previously identified as being suitable to support water vole and which are likely to be affected by the works. Where possible drainage works will be re-directed in areas where there is lower quality water vole habitat, therefore affecting fewer animals. If required, prior to construction works, water vole would be relocated to adjacent suitable habitat by displacement.	Negligible Negative Short-term	Negligible Adverse Not Significant	Not Significant
		Temporary loss of bank side and marginal/aquatic	Drainage works at watercourses known to support water vole will be kept to the minimum necessary to allow plant and vehicles safe operation and access.	Negligible Negative Short-term	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
		habitat	The affected area will be re-instated as soon as possible following completion of the works to minimise the time that the habitat is not available to water vole. Bank side grassland habitat will be re-seeded and where agreed with the landowner plant species which are favoured by water vole will be included in the seed mix.			
		Temporary severance of habitat	Where practical works at watercourses known to support water vole will be undertaken as soon as the destructive search is complete and areas promptly re-instated following construction, allowing water vole access to the affected area.	Negligible Negative Short-term	Negligible Adverse Not Significant	Not Significant
All AGI Sites						
Arable	Local	Permanent loss of a total of 22.76 ha of arable land through construction of all AGIs	No mitigation is available to counter this effect, however arable habitats will remain available in the surrounding areas and terrestrial links to these will be retained ensuring that any displaced faunal species can continue to inhabit the general area.	Negligible Negative Permanent	Negligible Adverse Not Significant	Not Significant
Hedgerow (Important Hedgerow at Tollingham Block Valve, Species Poor Hedgerow at Drax PIG Trap, Camblesforth Multi-junction, Dalton Block Valve and Skerne Block Valve).	Borough/Local	Permanent loss of hedgerow (All AGIs except Drax PIG Trap)	The removal of sections of hedgerow will be kept to the minimum necessary to allow plant and vehicles safe operation and access. Demarcation fencing will prevent encroachment by machinery onto retained sections of hedgerow. Wherever possible the AGI and AGI access routes will be located to make use of existing gaps in the hedgerow and will pass at right angles to the hedgerow, to minimise the area of hedgerow that needs to be removed.	Negligible Positive Permanent	Slight Beneficial Not Significant	Not Significant
		Temporary loss of hedgerow (Drax PIG Trap and Tollingham Block Valve)	Hedgerows will be reinstated following construction and where there are banks and ditches adjacent to hedgerows these will be reformed to similar profiles as before and topsoil will be replaced. These measures are secured through their inclusion in the CoCP (Document 7.5).	Negligible Negative Permanent	Slight Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
Arable / Hedgerow / Trees	Local / Borough / Regional	Creation of new habitat areas to replace existing arable habitat in the form of new planting around AGI sites	<p>In summary planting comprises:</p> <p>Drax PIG Trap - native shrub = 362 m², native tree & shrub = 1477 m², wildflower mix = 1207 m²</p> <p>Camblesforth Multi-junction -Hedgerow = approximate 573 m in length, native shrub = 6240 m², native tree and shrub = 7760 m², wildflower mix = 7304 m², 27 trees (standard and featured) to be planted.</p> <p>Tollingham Block Valve - Hedgerow = approximate 205 m in length, native shrub =272 m², native tree and shrub = 1997 m², 5 trees along northern boundary to be planted within the hedge.</p> <p>Dalton Block Valve - hedgerow = approximate 265 m in length, native shrub =343 m², native tree and shrub = 2154 m²</p> <p>Skerne Block Valve - hedgerow = 294 m in length, native shrub = 445m², tree and shrub = 2594m²</p> <p>Barmston Pumping Station - Low level scrub, grassland planting and occasional tree planting.</p> <p>A five year maintenance aftercare period will apply to all new planting. No specific additional mitigation measures required.</p>	Minor Positive Permanent	Slight Beneficial Not Significant	Not Significant
Bats – Foraging and Commuting	Foraging and commuting activity recorded at the AGI sites. Borough	Temporary disturbance, fragmentation and isolation during construction	Night time working will be avoided or kept to the absolute minimum to ensure known foraging areas are not lit unnecessarily or subject to increased noise levels.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
		Increased disturbance during operation including operation of small wind turbine (excluding at Barmston Pumping Station).	<p>On site lighting is likely to consist of bulkhead lights, only illuminated to allow safe access during night-time visits. During normal operations these will not be illuminated at night.</p> <p>Positioning of wind turbine in open hard standing or gravelled areas away from direct proximity to existing habitat features to be retained such as woodland, hedgerows and drains. These features will be</p>	No Change	Neutral Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
			<p>preferred foraging habitat to the hard standing gravelled areas within the AGI for low flying/foraging species. High flying species will not be affected due to the height of the turbine (6.5 m).</p> <p>Tree, scrub and hedgerow planting around site once established, will act as additional screening and buffering to the AGI. It will also provide additional 'edge' foraging and commuting habitat for low flying species.</p>			
Non-breeding Humber Estuary SPA Qualifying Species – Golden Plover and Lapwing	Non-breeding populations of golden plover and/or lapwing frequently recorded utilising arable habitat within or adjacent to AGI sites (typically outside AGI boundaries). Peak numbers recorded 106 golden plover at Tollingham Block Valve and 450 lapwing at Skerne Block Valve.	Permanent loss of habitat	<p>Strict adherence to construction working zones and fencing around zones.</p> <p>The proposed mitigation habitats are not suitable for such species.</p> <p>Restricting access into wintering bird habitat will reduce potential effects on such species utilising habitat adjacent to the construction area</p>	Negligible Negative Permanent	Negligible Adverse Not Significant	Not Significant
		Temporary disturbance during construction	<p>Strict adherence to construction working zones and fencing around zones.</p> <p>Restricting access into wintering bird habitat will reduce potential effects on such species utilising habitat adjacent to the construction area.</p>	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
	Regional	Permanent disturbance during operational period	Implementation of the landscape mitigation will reduce any likely effects on such species.	Negligible Negative Permanent	Negligible Adverse Not Significant	Not Significant
BoCC Red Listed Farmland Birds: Breeding Assemblage	All AGI sites support breeding populations (including confirmed, probable and possible breeders) of at least two of the following: Corn bunting, grasshopper warbler, grey partridge, house sparrow, lapwing, linnet, skylark, song thrush, spotted	Potential for destruction/damage to nests	<p>Site clearance/ground preparation and as much of the construction works as possible will be undertaken outside the breeding bird season.</p> <p>Commencing site clearance/ground preparation out of the breeding season will avoid destruction/damage to nests.</p>	No Change Temporary	Neutral Not Significant	Not Significant
		Temporary disturbance during construction period	Site clearance/ground preparation and as much of the construction works as possible will be undertaken outside the breeding bird season.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
	flycatcher, starling, tree sparrow, yellow wagtail, yellowhammer.		Commencing site clearance/ground preparation out of the breeding season will prevent disturbance effects on breeding birds.			
	Regional	Permanent loss of habitat during operational phase	The landscape mitigation (tree and shrubs) will result in a loss of breeding habitat for some baseline BoCC Red List species and opportunities for other baseline BoCC Red list species. These mitigation measures may maintain favourable habitat some BoCC Red Listed species however there s a high level of uncertainty when predicting this residual effect.	Minor Negative Permanent	Slight Adverse Not Significant	Not Significant
		Permanent disturbance during operational period	Implementation of the landscape mitigation will reduce any likely effects on such species.	Negligible Negative Permanent	Negligible Adverse Not Significant	Not Significant
BoCC Red Listed Farmland Birds: Wintering Assemblage	All sites support wintering populations, recorded regularly (i.e. on more than one survey) of at least two of the following: fieldfare, house sparrow, grey partridge, lapwing, lesser redpoll, marsh tit, skylark, starling, tree sparrow and yellowhammer. Regional	Temporary disturbance during construction period	Strict adherence to construction working zones and fencing around zones. Restricting access into wintering bird habitat will reduce the potential effects on such species	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
		Permanent loss and fragmentation of habitat during operational phase	The landscape mitigation (tree and shrubs) will result in a loss of breeding habitat for some BoCC Red List species and opportunities for other BoCC Red list species. These mitigation measures may maintain favourable habitat some BoCC Red Listed species.	Negligible Negative Permanent	Negligible Adverse Not Significant	Not Significant
All other species (Breeding and Wintering populations)	Surveys recorded at all sites wintering and breeding populations of species, typical of the habitats present, that are otherwise common and widespread, including but not restricted to thrushes (blackbird, robin),	Potential for destruction/damage to nests during construction period	Site clearance/ground preparation will be undertaken outside the breeding bird season. Commencing site clearance/ground preparation out of the breeding season will avoid destruction/damage of nests.	No Change Temporary	Neutral No Significant	Not Significant
		Temporary disturbance during Construction period	Strict adherence to construction working zones and fencing around zones. Commencing site clearance/ground preparation	Minor Negative Temporary	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
	corvids (rook, magpie), tits (blue tit, great tit), finches (chaffinch, greenfinch), doves, pigeons, game birds (pheasant, red – legged partridge) and common raptors (buzzard) Local		outside the of the breeding bird season will reduce disturbance effects on breeding birds			
		Permanent loss and fragmentation of habitat during operational phase	The landscape mitigation (trees/shrubs) is likely to result in an enhancement of the breeding and wintering bird diversity compared to the baseline conditions. These mitigation measures may maintain favourable habitat some BoCC Red Listed species however there s a high level of uncertainty when predicting this residual effect	Minor Negative Permanent	Negligible Beneficial Not Significant	Not Significant
		Noise disturbance to breeding and non breeding birds during operational period including disturbance from maintenance venting	There is a commitment in the draft DCO (Schedule 3 Requirements (Document 3.11)) that maintenance venting operations will be restricted to twice a year for a period of up to 1 hour at a maximum of 70dB $L_{Aeq, 1hr}$ at the nearest existing noise sensitive receptor (residential) and only between the hours of 07:00 and 19:00. This equates to noise level of 87bB or 84dB at the barn owl nest site; noise levels in the region of this level are described as ‘noisy’ and equate to similar environment to the kerbside of a busy street. Trees and hedgerows present around the perimeter of the AGI sites will be retrained (and supplemented with new planting) as shown on Barmston Pumping Station Indicative landscape Strategy (Document 2.16) which will provide some level of acoustic screening. During completion of maintenance operations the installation of temporary acoustic barriers around the vent stack will be deployed wherever possible to further reduce the noise levels.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
Schedule 1 Birds (Barn Owl)	Presence of barn owl at Skerne Block Valve and Barmston Pumping Station Local (Skerne Block Valve)	Noise disturbance to breeding and non breeding birds during operational period including disturbance from maintenance	As part of the design and layout of the Barmston Pumping Station site, landscaping and screening mounds will be created around the central operational areas of the AGI as shown on Barmston Pumping Station Illustrative Site Layout (Document 2.10). Trees and hedgerows present around the perimeter of the AGI sites will be retrained (and supplemented with	Minor Negative Temporary	Slight Adverse (based upon Regional Value) Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
	Regional (accounting for barn Owl at Barmston Pumping Station – see below).	venting	<p>new planting) as shown on Barmston Pumping Station Indicative landscape Strategy (Document 2.16) which will provide some level of acoustic screening. During completion of maintenance operations the installation of temporary acoustic barriers around the vent stack will be deployed wherever possible to further reduce the noise levels.</p> <p>Whilst venting operations may need to be undertaken at any time of the year, where possible, avoidance of venting during the most sensitive nesting period for Barn Owl (Spring/Summer) will be avoided where possible.</p> <p>Provision of alternative sites will provide suitable short and/or long term alternative locations for barn owl to use for nesting or roosting at a greater distance from the current site.</p>			
Drax PIG Trap						
Hedgerow (Species Poor)		Temporary loss of hedgerow	<p>The removal of sections of hedgerow will be kept to the minimum necessary to allow plant and vehicles safe operation and access at Drax this will not be more than 37 m but is likely to a lot less than this. Demarcation fencing will prevent encroachment by machinery onto retained sections of hedgerow. Wherever possible the AGI and AGI access routes will be located to make use of existing gaps in the hedgerow and will pass at right angles to the hedgerow, to minimise the area of hedgerow that needs to be removed.</p> <p>Hedgerows will be reinstated following construction and where there are banks and ditches adjacent to hedgerows these will be reformed to similar profiles as before and topsoil will be replaced. These measures are secured through their inclusion in the CoCP (Document 7.5).</p>	Negligible Negative Permanent	Slight Beneficial Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
Bats – Foraging and Commuting	Moderate levels of foraging and commuting activity recorded on the field boundaries, drains close to the site. Borough	Temporary disturbance, fragmentation and isolation during construction	A 7 m buffer will be provided between the working area and Carr Dike Drain which will ensure that bats can still forage along this section of drain.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
Otter and water vole	Otter and water vole present in located area (Carr Dike and Lendall Drain) adjacent to the site Regional	Temporary disturbance	A 7 m buffer will be provided along Carr Dike and Lendall Drain which will be demarcated to prevent encroachment onto otter habitat. Night time working will be avoided or kept to the absolute minimum. Where night time working is required lighting of the working area will be positioned to avoid the watercourse and bank side habitat being lit.	Minor Negative Temporary	Negligible Adverse Not Significant	Not Significant
		Increased disturbance during operation	On site lighting is likely to consist of bulkhead lights only illuminated to allow safe access during night-time visits. During normal operations these will not typically be illuminated at night. Landscaping, once established, will screen the site.	No Change	Neutral Not Significant	Not Significant
Breeding and non breeding waterfowl assemblage	Waterfowl assemblage, including Canada goose, cormorant, great crested grebe, mallard, coot, moorhen, teal, gadwall, tufted duck, mute swan, pochard, shoveler, wigeon associated with waterbodies located adjacent to (within the Study Area) but not within the AGI sites; two waterbodies located north and north east of the Drax PIG Trap site. All species were recorded at relatively low numbers.	Temporary disturbance during construction period	Strict adherence to construction working zones and fencing around zones. Restricting access next to wintering bird habitat will reduce the potential effects on such species.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
		Permanent disturbance during operational period	Implementation of the landscape mitigation will reduce any likely effects on such species.	Negligible Negative Permanent	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
	Local					
Camblesforth Multi-junction						
Trees	Borough	Loss and damage of trees (and scrub)	<p>During detailed design every effort will be made to avoid the felling of mature trees. Where mature trees are removed they will be replaced on a 4 for 1 basis using like for like species, in accordance with Section 10 of the CoCP (Document 7.5).</p> <p>Where trees will not be directly affected but are adjacent to the working width, mitigation will be implemented to ensure that the trees are not indirectly affected by the works. This will include protecting trees with a fence or use of bog mats to distribute the weight of machinery.</p>	Negligible Negative Permanent/ short – term	Negligible Adverse Not Significant	Not Significant
Bats - Roosting	Two bat roost tree sites identified to the north east of the site. Borough	Temporary disturbance of a bat roost	<p>Where known bat roosts will be retained, a buffer zone (the specific distance of which will be agreed on site through consultation with the Environmental Advisor/ Ecological Clerk of Works) will be placed around the bat roost tree to ensure that the tree is not affected during the works and to minimise disturbance. The tree will be demarcated with a protective fence to prevent encroachment and the fence will be retained through construction.</p> <p>Programming of works will aim to avoid night time working adjacent to known bat roost trees and it will be ensured that roost sites are not lit or disturbed unnecessarily.</p>	No Change	Neutral Not Significant	Not Significant
Breeding and non-breeding waterfowl assemblage	Waterfowl assemblage, including Canada goose, cormorant, great crested grebe, mallard, coot, moorhen, teal, gadwall, tufted duck, mute swan, pochard,	Temporary disturbance during construction period	<p>Strict adherence to construction working zones and fencing around zones.</p> <p>Restricting access next to wetland bird habitat will reduce potential effects on such species.</p>	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
	shoveler, wigeon associated with waterbodies located adjacent to (within the Study Area) but not within the AGI sites; Brockholes SINC lake located north east of the AGI. All species were recorded at relatively low numbers. Local	Permanent disturbance during operational period	Implementation of the landscape mitigation will reduce any likely effects on such species.	Negligible Negative Permanent	Negligible Adverse Not Significant	Not Significant
Tollingham Block Valve						
Trees	Borough	Loss and damage of trees	During detailed design every effort will be made to avoid the felling of mature trees. Where mature trees are removed they will be replaced on a 4 for 1 basis using like for like species, in accordance with Section 10 of the CoCP (Document 7.5). Where trees will not be directly affected but are adjacent to the working width, mitigation will be implemented to ensure that the trees are not indirectly affected by the works. This will include protecting trees with a fence or use of bog mats to distribute the weight of machinery.	Negligible Negative Permanent/ short-term	Negligible Adverse Not Significant	Not Significant
Bats - Roosting	Two bat roost tree sites identified to the north of the AGI site on Skiff Lane. Borough	Temporary disturbance of a bat roost	Where known bat roosts will be retained, a buffer zone (the specific distance of which will be agreed on site through consultation with the Environmental Advisor/ Ecological Clerk of Works) will be placed around the bat roost tree to ensure that the tree is not affected during the works and to minimise disturbance. The tree will be demarcated with a protective fence to prevent encroachment and the fence will be retained through construction. Programming of works will aim to avoid night time working adjacent to known bat roost trees and it will be ensured that roost sites are not lit or disturbed	No Change	Neutral Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
			unnecessarily.			
Great crested newt	Great crested newt confirmed within one pond within 500m of the AGI site.	Partial loss of terrestrial habitat	New habitat will be created in agreement with the landowner and will include new sections of hedgerow, gapping up existing hedgerows and creation of log piles within vicinity of the ponds.	Negligible Negative Permanent	Negligible Adverse Not Significant	Not Significant
	County (in combination with the value assigned to the wider population)	Increased risk of mortality and injury of great crested newt	Newts will be excluded from the working area under a Natural England licence. The mitigation strategy will be developed following guidance within the Great Crested Newt Mitigation Guidelines (Ref 9.40).	No Change	Neutral Not Significant	Not Significant
Brown hare	Brown Hare have been recorded within the vicinity of the Tollingham Block Valve particularly within areas with large open arable fields. Local	Temporary loss of brown hare habitat during construction	No specific mitigation measures are proposed for brown hare. However the adoption of measures as outlined in the CoCP (Document 7.5) for ecological species receptors during the construction phase will mitigate this effect. Prompt reinstatement of habitats following construction of the AGI site, including creation of hedge, scrub and grassland habitats, will also ensure the magnitude of these effects is no more than minor even in the absence of specific additional brown hare mitigation measures.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
		Disturbance to brown hare during construction.	No specific mitigation measures are proposed for brown hare. Disturbance will be temporary and restricted to distinct working areas. Brown hare are likely to be able to tolerate the short term construction disturbance be able to relocate to other suitable habitats within the vicinity and outside the working area.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
Dalton Block Valve						
Trees/woodland	Borough	Damage of retained trees	Where trees will not be directly affected but are adjacent to the working width, mitigation will be implemented to ensure that the trees are not indirectly affected by the works. This will include protecting trees with a fence or use of bog mats to distribute the weight of machinery.	No Change	Neutral Not Significant	Not Significant
Brown hare	Brown Hare have been recorded within proximity to the Dalton Block Valve particularly within areas with large open arable fields. Local	Temporary loss of brown hare habitat during construction	No specific mitigation measures are proposed for brown hare. However the adoption of measures as outlined in the CoCP (Document 7.5) for ecological species receptors during the construction phase will mitigate this effect. Prompt reinstatement of habitats following construction of the AGI site, including creation of hedge, scrub and grassland habitats, will also ensure the magnitude of these effects is no more than minor even in the absence of specific additional brown hare mitigation measures.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
		Disturbance to brown hare during construction.	No specific mitigation measures are proposed for brown hare. Disturbance will be temporary and restricted to distinct working areas. Brown hare are likely to be able to tolerate the short term construction disturbance be able to relocate to other suitable habitats within the vicinity and outside the working area.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
Skerne Block Valve						
Bats - Roosting	Two bat roost tree sites were identified to the south and south west of the AGI site. Borough	Temporary disturbance of a bat roost	<p>These two bat roost trees will be retained and avoided. A buffer zone (the specific distance of which will be agreed on site through consultation with the Environmental Advisor/Ecological Clerk of Works) will be placed around each of the two bat roost trees to ensure that the tree is not affected during the works and to minimise disturbance. The trees will be demarcated with a protective fence to prevent encroachment and the fence will be retained through construction.</p> <p>Programming of works will aim to avoid night time working adjacent to bat roost trees and it will be ensured that roost sites are not lit or disturbed unnecessarily.</p>	No Change	Neutral Not Significant	Not Significant
Brown hare	Brown Hare have been recorded particularly within areas with large open arable fields. Local	Temporary loss of brown hare habitat during construction	No specific mitigation measures are proposed for brown hare. However the adoption of measures as outlined in the CoCP (Document 7.5) for ecological species receptors during the construction phase will mitigate this effect. Prompt reinstatement of habitats following construction of the AGI site, including creation of hedge, scrub and grassland habitats, will also ensure the magnitude of these effects is no more than minor even in the absence of specific additional brown hare mitigation measures.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
		Disturbance to brown hare during construction.	No specific mitigation measures are proposed for brown hare. Disturbance will be temporary and restricted to distinct working areas. Brown hare are likely to be able to tolerate the short term construction disturbance be able to relocate to other suitable habitats within the vicinity and outside the working area.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
Wintering Bewick's swan	Recorded on only one survey (out of five) and in small	Temporary disturbance during	Strict adherence to construction working zones and fencing around zones.	Minor Negative Temporary	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
	numbers (8). Borough	construction period	Restricting access into wintering bird habitat will reduce potential effects on such species.			
		Permanent loss of habitat during operational phase	Strict adherence to construction working zones and fencing around zones. The proposed mitigation habitats are not suitable for such species. Restricting access into wintering bird habitat within the locality of the construction site will reduce potential effects on such species.	Negligible Negative Permanent	Negligible Adverse Not Significant	Not Significant
		Permanent disturbance during operational period	Implementation of the landscape mitigation will reduce any likely effects on such species.	Negligible Negative Permanent	Negligible Adverse Not Significant	Not Significant
Barn Owl	Barn owl was recorded in the vicinity of this site. Further detail is provided in the Confidential Barn Owl Report (Document 6.9.10). Local	Temporary disturbance during construction period	Site clearance/ground preparation and as much of the construction works as possible will be undertaken outside the breeding bird season. Commencing site clearance/ground preparation outside of the bird breeding season will reduce any disturbance effects relating to foraging barn owl during the breeding season.	No Change	Neutral Not Significant	Not Significant
		Permanent loss of habitat during operational phase	New landscape planting (trees and shrubs) is likely to provide good quality barn owl foraging habitat in the short-medium term in the early stages of the tree/shrub development. The small mammal population is likely to increase from baseline levels as a result of the landscape planting in the long-term.	Negligible Positive Permanent	Negligible Beneficial Not Significant	Not Significant
		Permanent disturbance during operational period	On site lighting is likely to consist of bulkhead lights only illuminated to allow safe access during night-time visits. During normal operations these will not typically be illuminated at night. Implementation of the landscape mitigation will reduce any likely effects on such species. No greater noise levels during operation than current existing background baseline levels will occur – see	No Change	Neutral Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
			Chapter 13: Noise and Vibration (Document 6.13). Additional 'edge' habitat created around AGI, which over time will provide potential foraging opportunities for barn owl.			
Barmston Pumping Station						
Trees	Borough	Loss and damage of trees	During detailed design every effort will be made to avoid the felling of mature trees. Where mature trees are removed they will be replaced on a 4 for 1 basis using like for like species, in accordance with Section 10 of the CoCP (Document 7.5). Where trees will not be directly affected but are adjacent to the working width, mitigation will be implemented to ensure that the trees are not indirectly affected by the works. This will include protecting trees with a fence or use of bog mats to distribute the weight of machinery.	Negligible Negative Permanent/ short – term	Negligible Adverse Not Significant	Not Significant
Bats – Foraging and Commuting	Very low levels of activity. Three common species of bat recorded foraging and commuting around the site Borough	Loss of foraging and commuting habitats for bats	New habitat will be created which will include, hedgerows, scrub and new ponds.	Minor Positive Permanent	Slight Beneficial Not Significant	Not Significant
Water vole	Water vole is present within and adjacent to the site. Regional	Direct effect on water vole and burrows	Preconstruction surveys will be carried out to check all watercourses previously identified as being suitable to support water vole and which are likely to be affected by the works. Where possible the Pipeline route will be realigned to cross the watercourse at locations where there is lower quality water vole habitat, therefore affecting fewer animals. Prior to construction works, water vole would be relocated to adjacent suitable habitat by displacement. As the working area is small, only a short section of habitat and small numbers of water vole would be affected by the works, therefore it is considered	Minor Negative Permanent	Slight Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
			appropriate to move water vole from the working area using passive methods. This involves habitat manipulation to encourage water vole to vacate a section of watercourse into adjacent unaffected habitat, followed by a destructive search.			
		Temporary disturbance to water vole whilst occupying a burrow	Burrows within the affected area would be removed following habitat manipulation and a destructive search. The displacement area would include the area to be directly affected by the works as well as an appropriate buffer to ensure that burrows adjacent the works are not incidentally damaged. The retained habitat adjacent the working area will be demarcated to prevent encroachment and works would be completed in these areas in as short a time as possible to minimise the period of activity in the area.	Negligible Negative Temporary	Negligible Adverse Not Significant	Not Significant
		Permanent loss of bank side and marginal/aquatic habitat; a total of up to 6 m associated with the construction of an internal access track	The drain within the centre of the site will be retained. A small section of drain (~6 m wide) will be lost to facilitate internal access roads within the AGI site. More optimal water vole habitat is located outside the site including the drain further south of the AGI and to the north connecting in with Earls Dike to the north). Improvement to retained drains to the east and west will be made to enhance them for use by water vole, with planting of bank side vegetation and incorporation of buffer zones to bank top between AGI site boundary and ditch.	Minor Negative Permanent	Slight Adverse Not Significant	Not Significant
		Temporary severance of water vole habitat	Habitat either side of the new crossing will be enhanced for water vole, to increase the carrying capacity. The culvert will be oversized to ensure that water vole can easily move through the culvert.	Minor Negative Permanent	Slight Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
Barn Owl	Further detail is provided in the Confidential Barn Owl Report. Regional	Temporary disturbance to nesting/roosting barn owl during construction period	<p>To ensure legal compliance site clearance, topsoil stripping, earthworks and any other ground preparation and as much of the construction works as possible will be undertaken at Barmston Pumping Station outside the breeding bird season (starting in October and finishing in February).</p> <p>A pre-construction barn owl survey will be undertaken by a suitably licensed ornithologist prior to any works. If works are planned to be undertaken when breeding barn owl is present then all works will be undertaken under a Precautionary Method of Working under the supervision of a suitably licensed Ecology Clerk of Works. A suitable exclusion zone will be maintained in relation to breeding barn owl. To ensure legal compliance no disturbance to nesting barn owl must occur and works must stop if advised by the Ecology Clerk of Works; Natural England should be advised before works can proceed.</p> <p>Commencing site clearance/ground preparation outside of the bird breeding season will reduce any disturbance effects relating to foraging barn owl during the breeding season.</p> <p>The existing nest site will be screened from the working area using an environmental barrier such as fencing, hoarding or straw bales. Access routes to and from the existing nest sites will be kept open for resident owls at all times.</p> <p>Two additional nest boxes will be installed at locations away from the pumping station site, at least one month in advance site work commencing.</p>	Negligible Negative Permanent/ Long-term	Negligible Adverse Not Significant	Not Significant

Summary of Effects – Ecology						
Receptor (Section)	Baseline status/value	Sources of effect	Mitigation	Magnitude and duration of residual effect	Significance of Effects - Pipeline Envelope	Significance of Effects - Likely Pipeline
		Permanent loss and fragmentation of habitat during operational phase	<p>Existing nest sites will be retained. Two further nest boxes will be provided in strategic locations away from the pumping station. A further nest box will be provided in a suitable location within the boundary of the pumping station site upon completion of the construction phase.</p> <p>New landscape planting (trees and shrubs) will provide good quality barn owl foraging habitat in the short-medium term in the early stages of the tree/shrub development. Bunds and mounds within the pumping stations site will be replanted and allowed to develop a tall, closed grassland sward that is attractive to prey species for barn owls. The small mammal population is likely to increase from base-line levels as a result of the landscape planting in the long-term.</p>	Minor Positive Permanent	Negligible Beneficial Not Significant	Not Significant
		Enhanced foraging opportunities around AGI for barn owl.	<p>New landscape planting (trees and shrubs) between the new infrastructure and the terrestrial habitat and barn owl nest site will create a noise and visual barrier between the development and terrestrial habitats.</p> <p>Erection of alternative artificial barn owl nest sites (e.g. barn owl boxes) will be of benefit to the existing breeding barn owls and has the potential to provide alternative nest sites if any indirect disturbance - related displacement occurs.</p>	Minor Negative Permanent	Neutral Not Significant	Not Significant

1.5 ARCHAEOLOGY AND CULTURAL HERITAGE (DOCUMENT 6.10) SUMMARY OF RESIDUAL EFFECTS

Summary of Archaeology and Cultural Heritage Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
Camblesforth Multi-junction Site - Tollingham Block Valve Site (including White Rose CCS Connection)				
CT298, possible Romano-British settlement site.	Excavation	Archaeological Evaluation followed by open area excavation and/or archaeological watching brief as appropriate.	Moderate adverse (significant)	Moderate adverse (significant)
CT143 and CT275, Throlam Farm Romano-British Pottery Kilns.	Excavation	Archaeological Evaluation followed by open area excavation and/or archaeological watching brief as appropriate.	Moderate adverse (significant)	Moderate adverse (significant)
Tollingham Block Valve to Dalton Block Valve				
TD6 Romano-British pottery kiln.	Excavation	Archaeological Evaluation followed by open area excavation and/or archaeological watching brief as appropriate.	Moderate adverse (significant)	Moderate adverse (significant)
TD9 Romano-British pottery kiln.	Excavation	Archaeological Evaluation followed by open area excavation and/or archaeological watching brief as appropriate.	Moderate adverse (significant)	Moderate adverse (significant)
TD376 Romano-British pottery kiln.	Excavation	Archaeological Evaluation followed by open area excavation and/or archaeological watching brief as appropriate.	Moderate adverse (significant)	Moderate adverse (significant)
TD382 Bronze Age barrows.	Excavation	Archaeological Evaluation followed by open area excavation and/or archaeological watching brief as appropriate.	Moderate adverse (significant)	Moderate adverse (significant)
TD384-TD386 Possible Iron Age square barrows.	Excavation	Archaeological Evaluation followed by open area excavation and/or archaeological watching brief as appropriate.	Moderate adverse (significant)	Moderate adverse (significant)
TD379 Enclosure	Excavation	Archaeological Evaluation followed by open area excavation and/or archaeological watching brief as appropriate.	Moderate adverse (significant)	Moderate adverse (significant)
TD388 Possible settlement site.	Excavation	Archaeological Evaluation followed by open area excavation and/or archaeological watching brief as appropriate.	Moderate adverse (significant)	Moderate adverse (significant)
TD371, possible Romano-British roadside settlement.	Excavation	Archaeological Evaluation followed by open area excavation and/or archaeological watching brief as appropriate.	Moderate adverse (significant)	Moderate adverse (significant)
TD83 and TD85, Extended Ladder Settlement	Excavation	Archaeological Evaluation followed by open area excavation and/or archaeological watching brief as	Moderate adverse (significant)	Moderate adverse (significant)

Summary of Archaeology and Cultural Heritage Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		appropriate.		
Dalton Block Valve to Skerne Block Valve				
DS213 Possible settlement site recorded through geophysical survey	Excavation	Archaeological Evaluation followed by open area excavation and/or archaeological watching brief as appropriate.	Moderate adverse (significant)	Moderate adverse (significant)
Skerne Block Valve to Barmston Section, and Barmston Pumping Station (including Barmston Pumping Station to MLWS)				
SB215 Wansford SMV	Excavation	Archaeological Evaluation followed by open area excavation and/or archaeological watching brief as appropriate.	Moderate adverse (significant)	Moderate adverse (significant)
SB274 Winkton DMV	Excavation	Archaeological Evaluation followed by open area excavation and/or archaeological watching brief as appropriate.	Moderate adverse (significant)	Moderate adverse (significant)

*NOTE this table only lists those residual effects which are significant

1.6 LANDSCAPE AND VISUAL ASSESSMENT (DOCUMENT 6.11) SUMMARY OF RESIDUAL EFFECTS

Summary of Landscape and Visual Assessment Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
Camblesforth Multi-junction Site - Tollingham Block Valve Site (including White Rose CCS Connection)				
Landscape Character	Pipeline Envelope (Construction Effects - Temporary and short term) (Enduring effects - Long term)	Full details of mitigation measures are provided in section 11.8 (Document 6.11) of the ES. In summary, measures include: <ul style="list-style-type: none"> - Avoidance of key landscape features through considered routeing design; - Replacement hedgerow planting; - Replacement tree planting (4:1 for mature trees) - Reinstatement of agricultural land and road verges. 	Minor Adverse (Not significant)	Minor Adverse (Not significant)
Landscape Character	Drax PIG Trap (Construction Effects - Temporary and short term) (Enduring effects - Long term)	Mitigation measures include: <ul style="list-style-type: none"> - Considered sitting; - Native hedge tree and woodland planting; and - Creation of species rich grassland. 	Negligible Adverse (Not significant)	Negligible Adverse (Not significant)
Landscape Character	Camblesforth Multi-junction (Construction Effects - Temporary and short term) (Enduring effects - Long term)	Mitigation measures include: <ul style="list-style-type: none"> - Considered sitting; - Native hedge tree and woodland planting; - Creation of new hedgebank; and - Creation of species rich grassland. 	Minor Adverse (Not significant)	Minor Adverse (Not significant)
Landscape Character	Tollingham Block Valve (Construction Effects - Temporary and short term) (Enduring effects - Long term)	Mitigation measures include: <ul style="list-style-type: none"> - Considered sitting; - Native hedge tree and woodland planting; and - Creation of species rich grassland. 	Minor Adverse (Not significant)	Minor Adverse (Not significant)
Visual Receptors	Pipeline Envelope (Construction Effects - Temporary and short term)	Other than landscape reinstatement (detailed above), no specific measures are proposed.	Not Significant	Not Significant
Visual Receptors	Drax PIG Trap (Construction Effects - Temporary and short term)	Considered sitting. Native woodland screen planting to the site boundaries.	Minor Adverse reducing to Negligible Adverse following establishment of mitigation (Not significant)	Minor Adverse reducing to Negligible Adverse following establishment of mitigation

Summary of Landscape and Visual Assessment Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
	(Enduring effects - Long term)			(Not significant)
Visual Receptors	Camblesforth Multi-junction (Construction Effects - Temporary and short term) (Enduring effects - Long term)	Considered siting. Native woodland screen planting to the site boundaries.	Range of effects from No Effect, to Moderate - Minor Adverse reducing to Minor Adverse following establishment of mitigation (Not significant)	Range of effects from No Effect, to Moderate - Minor Adverse reducing to Minor Adverse following establishment of mitigation (Not significant)
Visual Receptors	Tollingham Block Valve (Construction Effects - Temporary and short term) (Enduring effects - Long term)	Considered sitting. Native woodland screen planting to the site boundaries.	Minor Adverse reducing to Negligible Adverse following establishment of mitigation (Not significant)	Minor Adverse reducing to Negligible Adverse following establishment of mitigation (Not significant)
Tollingham Block Valve Site to Dalton Block Valve Site				
Landscape Character	Pipeline Envelope	Full details of mitigation measures are provided in section 11.8 (Document 6.11) of the ES. In summary, measures include: <ul style="list-style-type: none"> - Avoidance of key landscape features through considered routeing design; - Replacement hedgerow planting; - Replacement tree planting (4:1 for mature trees) - Reinstatement of agricultural land and road verges. 	Minor Adverse (Not Significant)	Minor Adverse (Not Significant)
Landscape Character	Dalton Block Valve	Mitigation measures include: <ul style="list-style-type: none"> - Considered sitting. - Native hedge tree and woodland planting; - Creation of a 'farm track' style access road. 	Moderate - Minor Adverse (Not significant)	Moderate - Minor Adverse (Not significant)
Visual Receptors	Pipeline Envelope	Other than landscape reinstatement (detailed above), no specific measures are proposed.	Not Significant	Not Significant
Visual Receptors	Dalton Block Valve	Considered sitting. Native woodland screen planting to the site boundaries.	Moderate Adverse to Minor	Moderate Adverse to Minor Adverse during

Summary of Landscape and Visual Assessment Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
			Adverse during construction, reducing to Negligible Adverse over time (Not significant)	construction, reducing to Negligible Adverse over time (Not significant)
Dalton Block Valve Site to Skerne Block Valve Site				
Landscape Character	Pipeline Envelope	Full details of mitigation measures are provided in section 11.8 (Document 6.11) of the ES. In summary, measures include: <ul style="list-style-type: none"> - Avoidance of key landscape features through considered routeing design; - Replacement hedgerow planting; - Replacement tree planting (4:1 for mature trees) - Reinstatement of agricultural land and road verges. 	Minor Adverse (Not significant)	Minor Adverse (Not significant)
Landscape Character	Skerne Block Valve	Mitigation measures include: <ul style="list-style-type: none"> - Considered sitting. - Native hedge tree and woodland planting; - Creation of a 'farm track' style access road. 	Minor Adverse (Not significant)	Minor Adverse (Not significant)
Visual Receptors	Pipeline Envelope	Other than landscape reinstatement (detailed above), no specific measures are proposed.	Not Significant	Not Significant
Visual Receptors	Skerne Block Valve	Considered sitting. Native tree, hedge and woodland screen planting to the site boundaries.	Effects range from Moderate Adverse, (reducing to Moderate-Minor Adverse) to Negligible (Not significant)	Effects range from Moderate Adverse, (reducing to Moderate-Minor Adverse) to Negligible (Not significant)
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
Skerne Block Valve Site - Barmston Pumping Station (including Barmston Pumping Station to MLWS)				
Landscape Character	Pipeline Envelope	Full details of mitigation measures are provided in section 11.8 (Document 6.11) of the ES. In summary, measures include: <ul style="list-style-type: none"> - Avoidance of key landscape features through 	Minor Adverse / Negligible (Not significant)	Minor Adverse / Negligible (Not significant)

Summary of Landscape and Visual Assessment Residual Effects				
Receptor/Source	Sources and type of effect	Mitigation	Likely Significance of Effects (Pipeline Envelope).	Likely Significance of Effects (Likely Pipeline).
		considered routeing design; - Replacement hedgerow planting; - Replacement tree planting (4:1 for mature trees) - Reinstatement of agricultural land and road verges.		
Landscape Character	Barmston Pumping Station	The mitigation of the Pumping Station is an integral part of the design of the site which includes: - Considered siting; - Sculptural Landform to enclose the site; - Native hedge, tree and woodland planting; - Woodland management; - Reduced hard standing in comparison with standard design solutions; - Habitat creation including grassland, wetland and marginal planting.	Minor Adverse (Not significant)	Minor Adverse (Not significant)
Visual Receptors	Pipeline Envelope	Other than landscape reinstatement (detailed above), no specific measures are proposed.	Not Significant	Not Significant
Visual Receptors	Barmston Pumping Station	Considered siting. Native woodland screen planting to the site boundaries.	Effects range from Moderate Adverse to Minor Adverse and Negligible (Not significant)	Effects range from Moderate Adverse to Minor Adverse and Negligible (Not significant)

1.7 AIR QUALITY (DOCUMENT 6.12) SUMMARY OF RESIDUAL EFFECTS

Summary of Air Quality Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (With Pipeline Envelope)	Likely Significance of Effects (With Likely Pipeline)
Camblesforth Multi-junction Site - Tollingham Block Valve Site (including White Rose CCS Connection)				
<p>A human receptor, as considered within the IAQM guidance, is any location where a person may experience:</p> <ul style="list-style-type: none"> • Annoyance effects of airborne dust or dust soiling e.g. dwellings, industrial or commercial premises such as a vehicle showroom and electronics manufacturers; or • Exposure to PM₁₀ over a period relevant to the air quality objectives <p>Human receptors are considered to be sensitive if located within 350 of the Pipeline Envelope or Application Boundary when assessing the potential effects associated with the AGI, TCA and Construction Compounds or 500 m of the site access and 100 m from route(s) used by construction vehicles on the public highway.</p> <p>The nearest receptors (located within 20 m of the proposed works) and therefore those most at risk of dust effects were:</p> <ul style="list-style-type: none"> • Baxter Hall on Main Road, Drax; • Woodlands on Main Road, Drax; • Five properties on Wade House Lane; and 	<p>Dust effects may occur during the earthworks associated with the construction phase of the Pipeline, TCAs, construction compounds and AGI sites. This may lead to potential nuisance effects at receptors due to dust deposition and soiling of surfaces.</p>	<p>Specific mitigation measures should be adopted such as:</p> <ul style="list-style-type: none"> • Handling and transfer of soil and dusty materials will be controlled to minimise dust generation. During material handling operations always keep the number of handling operations to a minimum and ensure that dusty material is not moved or handled unnecessarily. • When loading vehicles in the vicinity of receptors and under dry windy conditions conducive to dust dispersal, use material handling methods that minimise the generation of airborne dust. Drop heights must be kept to a minimum. Damp down with water using a water bower where there are visible dust issues and under prolonged dry conditions. • Where there is an option, stockpiles will be located as far away from sensitive human and ecological receptors as possible. • Where there is visible dust generation from working areas and stockpiles that appears to be causing a problem, during prolonged periods of dry weather, local spraying with water will be considered, using bowsers or temporary static sprays, as necessary, to suppress dust generation. <p>Further mitigation measures are documented in the CoCP (Document 7.5).</p>	Neutral (Not significant)	Neutral (Not significant)
	<p>Dust effects may occur during construction works associated with the construction phase of the AGI sites. This may lead to potential nuisance effects at receptors due to dust deposition and soiling of surfaces.</p>	<p>Standard Mitigation measures should be applied such as:</p> <ul style="list-style-type: none"> • Implement a stakeholder communications plan that includes community engagement before and during work on site. 	Neutral (Not significant)	Neutral (Not significant)

Summary of Air Quality Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (With Pipeline Envelope)	Likely Significance of Effects (With Likely Pipeline)
<ul style="list-style-type: none"> Four properties on Pear Tree Avenue. <p>No ecological receptors were identified within 100 m of the Pipeline Envelope, TCAs, construction compounds and AGIs. However, the Humber Estuary SSSI and Barn Hill Meadows SSSI are located within 100 m of a construction route.</p>		<ul style="list-style-type: none"> Recording of all dust and air quality complaints, identify cause and take appropriate measures to reduce emissions in a timely manner. Should any dust complaints be received, they will be logged by the Contractor in a complaints register, together with a record of the responses given and actions taken. The register will be provided to National Grid at regular intervals for review. Plan site layout so that machinery and dust-generating activities, such as soil screening, are located as far away from sensitive receptors as practicably possible. Where practical remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. <p>Further mitigation measures are documented in the CoCP (Document 7.5).</p>		
	<p>Dust effects may occur during track out, which will be undertaken during the construction and decommissioning phases. This may lead to potential nuisance effects at receptors due to dust deposition and soiling of surfaces. It will also result in increased nuisance due to resuspended dust on local roads.</p>	<p>Specific mitigation measures should be undertaken such as:</p> <ul style="list-style-type: none"> Hardcore surfacing to be provided at access and egress points to the public highway. The use of mechanical road sweepers on public roads at road crossings, construction compounds and other works accesses to clean roads (of dust and mud deposits) at appropriate intervals. If necessary mud deposits will be removed by hand. Vehicle washing facilities at the main temporary construction compounds. Appropriate speed limit to be enforced on site to minimise dust generation (maximum 15 mph). <p>Further mitigation measures are documented in the CoCP (Document 7.5).</p>	Neutral (Not significant)	Neutral (Not significant)

Summary of Air Quality Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (With Pipeline Envelope)	Likely Significance of Effects (With Likely Pipeline)
	Dust effects may occur during demolition works, which will be undertaken as part of the decommissioning phase. This may lead to potential nuisance effects at receptors due to dust deposition and soiling of surfaces.	<p>Standard Mitigation measures should be applied such as:</p> <ul style="list-style-type: none"> Implement a stakeholder communications plan that includes community engagement before and during work on site. Recording of all dust and air quality complaints, identify cause and take appropriate measures to reduce emissions in a timely manner. Should any dust complaints be received, they will be logged by the Contractor in a complaints register, together with a record of the responses given and actions taken. The register will be provided to National Grid at regular intervals for review. Plan site layout so that machinery and dust-generating activities, such as soil screening, are located as far away from sensitive receptors as practicably possible. Where practical remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. <p>Further mitigation measures are documented in the CoCP (Document 7.5).</p>	Neutral (Not significant)	Neutral (Not significant)
Tollingham Block Valve Site to Dalton Block Valve Site				
<p>A human receptor, as considered within the IAQM guidance, is any location where a person may experience:</p> <ul style="list-style-type: none"> Annoyance effects of airborne dust or dust soiling e.g. dwellings, industrial or commercial premises such as a vehicle showroom and electronics manufacturers; or Exposure to PM₁₀ over a period relevant to the air quality objectives <p>Human receptors are considered</p>	Dust effects may occur during the earthworks associated with the construction phase of the Pipeline, TCAs, construction compounds and AGI sites. This may lead to potential nuisance effects at receptors due to dust deposition and soiling of surfaces.	<p>Specific mitigation measures should be adopted such as:</p> <ul style="list-style-type: none"> Handling and transfer of soil and dusty materials will be controlled to minimise dust generation. During material handling operations always keep the number of handling operations to a minimum and ensure that dusty material is not moved or handled unnecessarily. When loading vehicles in the vicinity of receptors and under dry windy conditions conducive to dust dispersal, use material handling methods that minimise the generation of airborne dust. Drop heights must be kept to a minimum. Damp down with water using a water bower where there 	Neutral (Not significant)	Neutral (Not significant)

Summary of Air Quality Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (With Pipeline Envelope)	Likely Significance of Effects (With Likely Pipeline)
<p>to be sensitive if located within 350 of the Pipeline Envelope or Application Boundary when assessing the potential effects associated with the AGI, TCA and Construction Compounds or 500 m of the site access and 100 m from route(s) used by construction vehicles on the public highway.</p> <p>The nearest receptors (located within 50 m of the proposed works) and therefore those most at risk of dust effects were:</p> <ul style="list-style-type: none"> • Tollingham Cottage, Skiff Lane, Holme on Spalding Moor; • New Farm, Sand Lane, Holme on Spalding Moor; and • Two properties on Weighton Hill, Market Weighton. <p>No ecological receptors were identified within 100 m of the Pipeline Envelope, TCAs, Construction Compounds and AGIs; however, the Humber Estuary SSSI is located within 100 m of a construction route.</p>		<p>are visible dust issues and under prolonged dry conditions.</p> <ul style="list-style-type: none"> • Where there is an option, stockpiles will be located as far away from sensitive human and ecological receptors as possible. • Where there is visible dust generation from working areas and stockpiles that appears to be causing a problem, during prolonged periods of dry weather, local spraying with water will be considered, using bowsers or temporary static sprays, as necessary, to suppress dust generation. <p>Further mitigation measures are documented in the CoCP (Document 7.5).</p>		
	<p>Dust effects may occur during construction works associated with the construction phase of the AGI sites. This may lead to potential nuisance effects at receptors due to dust deposition and soiling of surfaces.</p>	<p>Standard Mitigation measures should be applied such as:</p> <ul style="list-style-type: none"> • Implement a stakeholder communications plan that includes community engagement before and during work on site. • Recording of all dust and air quality complaints, identify cause and take appropriate measures to reduce emissions in a timely manner. Should any dust complaints be received, they will be logged by the Contractor in a complaints register, together with a record of the responses given and actions taken. The register will be provided to National Grid at regular intervals for review. • Plan site layout so that machinery and dust-generating activities, such as soil screening, are located as far away from sensitive receptors as practicably possible. Where practical remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site <p>Further mitigation measures are documented in the CoCP (Document 7.5).</p>	<p>Neutral (Not significant)</p>	<p>Neutral (Not significant)</p>
	<p>Dust effects may occur during track out, which will be undertaken during the construction and decommissioning phases. This may lead to potential nuisance effects at</p>	<p>Specific mitigation measures should be undertaken such as:</p> <ul style="list-style-type: none"> • Hardcore surfacing to be provided at access and egress points to the public highway. 	<p>Neutral (Not significant)</p>	<p>Neutral</p>

Summary of Air Quality Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (With Pipeline Envelope)	Likely Significance of Effects (With Likely Pipeline)
	receptors due to dust deposition and soiling of surfaces. It will also result in increased nuisance due to resuspended dust on local roads.	<ul style="list-style-type: none"> The use of mechanical road sweepers on public roads at road crossings, construction compounds and other works accesses to clean roads (of dust and mud deposits) at appropriate intervals. If necessary mud deposits will be removed by hand. Vehicle washing facilities at the main temporary construction compounds. Appropriate speed limit to be enforced on site to minimise dust generation (maximum 15 mph). <p>Further mitigation measures are documented in the CoCP (Document 7.5).</p>		
	Dust effects may occur during demolition works, which will be undertaken as part of the decommissioning phase. This may lead to potential nuisance effects at receptors due to dust deposition and soiling of surfaces.	<p>Standard Mitigation measures should be applied such as:</p> <ul style="list-style-type: none"> Implement a stakeholder communications plan that includes community engagement before and during work on site. Recording of all dust and air quality complaints, identify cause and take appropriate measures to reduce emissions in a timely manner. Should any dust complaints be received, they will be logged by the Contractor in a complaints register, together with a record of the responses given and actions taken. The register will be provided to National Grid at regular intervals for review. Plan site layout so that machinery and dust-generating activities, such as soil screening, are located as far away from sensitive receptors as practicably possible. Where practical remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site <p>Further mitigation measures are documented in the CoCP (Document 7.5).</p>	Neutral (Not significant)	Neutral (Not significant)
Dalton Block Valve Site to Skerne Block Valve Site				
A human receptor, as considered within the IAQM guidance, is any	Dust effects may occur during the earthworks associated with the construction phase of the Pipeline, TCAs, construction compounds and	<p>Specific mitigation measures should be adopted such as:</p> <ul style="list-style-type: none"> Handling and transfer of soil and dusty 	Neutral (Not significant)	Neutral (Not significant)

Summary of Air Quality Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (With Pipeline Envelope)	Likely Significance of Effects (With Likely Pipeline)
<p>location where a person may experience:</p> <ul style="list-style-type: none"> Annoyance effects of airborne dust or dust soiling e.g. dwellings, industrial or commercial premises such as a vehicle showroom and electronics manufacturers; or Exposure to PM₁₀ over a period relevant to the air quality objectives <p>Human receptors are considered to be sensitive if located within 350 of the Pipeline Envelope or Application Boundary when assessing the potential effects associated with the AGI, TCA and Construction Compounds or 500 m of the site access and 100 m from route(s) used by construction vehicles on the public highway.</p> <p>The Pipeline Envelope passes in close proximity to the village of Hutton, where several residential properties are located within 100 m of the works. While for the remainder of the section the nearest sensitive receptors were located > 100 m from the Pipeline Envelope, TCAs, construction compounds and AGIs.</p> <p>The Driffield Barracks construction compound is located in Kellythorpe. Two residential properties were located within 20 m of this site.</p> <p>No ecological receptors were identified within 100 m of the</p>	<p>AGIs. This may lead to potential nuisance effects at receptors due to dust deposition and soiling of surfaces.</p>	<p>materials will be controlled to minimise dust generation. During material handling operations always keep the number of handling operations to a minimum and ensure that dusty material is not moved or handled unnecessarily.</p> <ul style="list-style-type: none"> When loading vehicles in the vicinity of receptors and under dry windy conditions conducive to dust dispersal, use material handling methods that minimise the generation of airborne dust. Drop heights must be kept to a minimum. Damp down with water using a water bower where there are visible dust issues and under prolonged dry conditions. Where there is an option, stockpiles will be located as far away from sensitive human and ecological receptors as possible. Where there is visible dust generation from working areas and stockpiles that appears to be causing a problem, during prolonged periods of dry weather, local spraying with water will be considered, using bowsers or temporary static sprays, as necessary, to suppress dust generation. <p>Further mitigation measures are documented in the CoCP (Document 7.5).</p>		
	<p>Dust effects may occur during construction works associated with the construction phase of the AGI sites. This may lead to potential nuisance effects at receptors due to dust deposition and soiling of surfaces.</p>	<p>Standard Mitigation measures should be applied such as:</p> <ul style="list-style-type: none"> Implement a stakeholder communications plan that includes community engagement before and during work on site. Recording of all dust and air quality complaints, identify cause and take appropriate measures to reduce emissions in a timely manner. Should any dust complaints be received, they will be logged by the Contractor in a complaints register, together with a record of the responses given and actions taken. The register will be provided to National Grid at regular intervals for 	Neutral (Not significant)	Neutral (Not significant)

Summary of Air Quality Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (With Pipeline Envelope)	Likely Significance of Effects (With Likely Pipeline)
Pipeline Envelope, TCAs, construction compounds and AGIs; however, the River Hull Headwaters SSSI and Bryan Mills Fields SSSI are located within 100 m of a construction route.		<p>review.</p> <ul style="list-style-type: none"> Plan site layout so that machinery and dust-generating activities, such as soil screening, are located as far away from sensitive receptors as practicably possible. Where practical remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site <p>Further mitigation measures are documented in the CoCP (Document 7.5).</p>		
	Dust effects may occur during track out, which will be undertaken during the construction and decommissioning phases. This may lead to potential nuisance effects at receptors due to dust deposition and soiling of surfaces. It will also result in increased nuisance due to resuspended dust on local roads.	<p>Specific mitigation measures should be undertaken such as:</p> <ul style="list-style-type: none"> Hardcore surfacing to be provided at access and egress points to the public highway. The use of mechanical road sweepers on public roads at road crossings, construction compounds and other works accesses to clean roads (of dust and mud deposits) at appropriate intervals. If necessary mud deposits will be removed by hand. Vehicle washing facilities at the main temporary construction compounds. Appropriate speed limit to be enforced on site to minimise dust generation (maximum 15 mph). <p>Further mitigation measures are documented in the CoCP (Document 7.5).</p>	Neutral (Not significant)	Neutral (Not significant)

Summary of Air Quality Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (With Pipeline Envelope)	Likely Significance of Effects (With Likely Pipeline)
	Dust effects may occur during demolition works, which will be undertaken as part of the decommissioning phase. This may lead to potential nuisance effects at receptors due to dust deposition and soiling of surfaces.	<p>Standard Mitigation measures should be applied such as:</p> <ul style="list-style-type: none"> Implement a stakeholder communications plan that includes community engagement before and during work on site. Recording of all dust and air quality complaints, identify cause and take appropriate measures to reduce emissions in a timely manner. Should any dust complaints be received, they will be logged by the Contractor in a complaints register, together with a record of the responses given and actions taken. The register will be provided to National Grid at regular intervals for review. Plan site layout so that machinery and dust-generating activities, such as soil screening, are located as far away from sensitive receptors as practicably possible. Where practical remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. <p>Further mitigation measures are documented in the CoCP (Document 7.5).</p>	Neutral (Not significant)	Neutral (Not significant)
Skerne Block Valve Site - Barmston Pumping Station (including Barmston Pumping Station to MLWS)				
<p>A human receptor, as considered within the IAQM guidance, is any location where a person may experience:</p> <ul style="list-style-type: none"> Annoyance effects of airborne dust or dust soiling e.g. dwellings, industrial or commercial premises such as a vehicle showroom and electronics manufacturers; or Exposure to PM₁₀ over a period relevant to the air quality objectives <p>Human receptors are considered</p>	Dust effects may occur during the earthworks associated with the construction phase of the Pipeline, TCA, Construction Compounds and AGIs. This may lead to potential nuisance effects at receptors due to dust deposition and soiling of surfaces.	<p>Specific mitigation measures should be adopted such as:</p> <ul style="list-style-type: none"> Handling and transfer of soil and dusty materials will be controlled to minimise dust generation. During material handling operations always keep the number of handling operations to a minimum and ensure that dusty material is not moved or handled unnecessarily. When loading vehicles in the vicinity of receptors and under dry windy conditions conducive to dust dispersal, use material handling methods that minimise the generation of airborne dust. Drop heights must be kept to a minimum. Damp down with water using a water bower where there 	Neutral (Not significant)	Neutral (Not significant)

Summary of Air Quality Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (With Pipeline Envelope)	Likely Significance of Effects (With Likely Pipeline)
to be sensitive if located within 350 of the Pipeline Envelope or Application Boundary when assessing the potential effects associated with the AGI, TCA and Construction Compounds or 500 m of the site access and 100 m from route(s) used by construction vehicles on the public highway. The nearest sensitive receptors were residential properties on the B1249 in Wansford located within 50 m. All other receptors were located more than 100 m from the proposed works.		<p>are visible dust issues and under prolonged dry conditions.</p> <ul style="list-style-type: none"> Where there is an option, stockpiles will be located as far away from sensitive human and ecological receptors as possible. Where there is visible dust generation from working areas and stockpiles that appears to be causing a problem, during prolonged periods of dry weather, local spraying with water will be considered, using bowsers or temporary static sprays, as necessary, to suppress dust generation. <p>Further mitigation measures are documented in the CoCP (Document 7.5).</p>		
Both the Pipeline itself and the construction routes cross the River Hull Headwaters SSSI.	Dust effects may occur during construction works associated with the construction phase of the AGI sites. This may lead to potential nuisance effects at receptors due to dust deposition and soiling of surfaces.	<p>Standard Mitigation measures should be applied such as:</p> <ul style="list-style-type: none"> Implement a stakeholder communications plan that includes community engagement before and during work on site. Recording of all dust and air quality complaints, identify cause and take appropriate measures to reduce emissions in a timely manner. Should any dust complaints be received, they will be logged by the Contractor in a complaints register, together with a record of the responses given and actions taken. The register will be provided to National Grid at regular intervals for review. Plan site layout so that machinery and dust-generating activities, such as soil screening, are located as far away from sensitive receptors as practicably possible. Where practical remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site <p>Further mitigation measures are documented in the CoCP (Document 7.5).</p>	Neutral (Not significant)	Neutral (Not significant)
	Dust effects may occur during track out, which will be undertaken during the construction and decommissioning phases. This may lead to potential nuisance effects at	<p>Specific mitigation measures should be undertaken such as:</p> <ul style="list-style-type: none"> Hardcore surfacing to be provided at access and egress points to the public highway. 	Neutral (Not significant)	Neutral (Not significant)

Summary of Air Quality Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (With Pipeline Envelope)	Likely Significance of Effects (With Likely Pipeline)
	receptors due to dust deposition and soiling of surfaces. It will also result in increased nuisance due to resuspended dust on local roads.	<ul style="list-style-type: none"> The use of mechanical road sweepers on public roads at road crossings, construction compounds and other works accesses to clean roads (of dust and mud deposits) at appropriate intervals. If necessary mud deposits will be removed by hand. Vehicle washing facilities at the main temporary construction compounds. Appropriate speed limit to be enforced on site to minimise dust generation (maximum 15 mph). <p>Further mitigation measures are documented in the CoCP (Document 7.5).</p>		
	Dust effects may occur during demolition works, which will be undertaken as part of the decommissioning phase. This may lead to potential nuisance effects at receptors due to dust deposition and soiling of surfaces.	<p>Standard Mitigation measures should be applied such as:</p> <ul style="list-style-type: none"> Implement a stakeholder communications plan that includes community engagement before and during work on site. Recording of all dust and air quality complaints, identify cause and take appropriate measures to reduce emissions in a timely manner. Should any dust complaints be received, they will be logged by the Contractor in a complaints register, together with a record of the responses given and actions taken. The register will be provided to National Grid at regular intervals for review. Plan site layout so that machinery and dust-generating activities, such as soil screening, are located as far away from sensitive receptors as practicably possible. Where practical remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site <p>Further mitigation measures are documented in the CoCP (Document 7.5).</p>	Neutral (Not significant)	Neutral (Not significant)

1.8 NOISE AND VIBRATION (DOCUMENT 6.13) SUMMARY OF RESIDUAL EFFECTS

Summary of Noise Assessment Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (with Pipeline Envelope)	Likely Significance of Effects (with Likely Pipeline)
All Pipeline Sections				
Sensitive receptors within 300m of Pipeline Envelope	Construction Vibration	Selection of appropriate plant, distance between construction works and sensitive receptors.	Less than Minor Adverse at the closest sensitive receptors (not significant).	Less than Minor adverse at the closest sensitive receptors. There are less sensitive receptors within the Likely Pipeline area (not significant).
Camblesforth Multi-junction Site to Tollingham Block Valve Site Section (including The White Rose CCS Connection)				
23 NSRs Within 50m of Pipeline Envelope. Figures 13.4-13.6 show the location of NSRs.	Construction of the Pipeline (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Moderate (significant) to Minor Adverse (not significant).	Moderate (significant) to Minor Adverse (not significant). However there is only one NSR within 50 m of Likely Pipeline
10 NSRs located between 50 and 100 m from Pipeline Envelope. Figures 13.4-13.6 show the location of NSRs	Construction of the Pipeline (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Moderate (significant) to Minor Adverse (not significant).	Moderate (significant) to Minor Adverse (not significant). There are 8 NSRs between 50 and 100 m of Likely Pipeline.
33 NSRs located between 100- 200 m from Pipeline Envelope. Figures 13.4-13.6 show the location of NSRs	Construction of the Pipeline (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant). There are 22 NSRs between 100 and 200 m of Likely Pipeline
18 NSRs located between 200- 300 m from Pipeline Envelope Figures 13.4-13.6 show the location of NSRs	Construction of the Pipeline (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse(not significant) . There are 24 NSRs between 200 and 300 m of Likely Pipeline

Summary of Noise Assessment Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (with Pipeline Envelope)	Likely Significance of Effects (with Likely Pipeline)
3 NSRs Within 50m of Flexible Drainage Areas. Figures 13.14 and 13.15 show the location of the NSRs	Pipeline drainage works (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
3 NSRs located between 50 and 100 m from the Flexible Drainage Areas Figures 13.14 and 13.15 show the location of the NSRs	Pipeline drainage works (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
8 NSRs located between 100 and 200 m from the Flexible Drainage Areas Figures 13.14 and 13.15 show the location of the NSRs	Pipeline drainage works (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
20 NSRs located between 200 and 300 m from the Flexible Drainage Areas Figures 13.14 and 13.15 show the location of the NSRs	Pipeline drainage works (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
NSRs in vicinity of Drax PIG Trap Temporary	Pipeline stringing (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).

Summary of Noise Assessment Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (with Pipeline Envelope)	Likely Significance of Effects (with Likely Pipeline)
Construction Area (TCA)				
NSRs in vicinity of Camblesforth Multi-junction TCA (properties on Wade House Lane)	Pipeline stringing (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor adverse (not significant).	Minor Adverse (not significant).
NSRs in vicinity of Tollingham Block Valve TCA	Pipeline stringing (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
NSRs in vicinity of Pipeline Envelope TCA 1 (Woodlands)	Pipeline stringing (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Moderate Adverse (significant).	Moderate Adverse (Significant).
NSRs in vicinity of Pipeline Envelope TCA 2 (Properties on Wade House Lane)	Pipeline stringing (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Moderate Adverse (significant).	Moderate Adverse (significant).
NSRs in vicinity of Pipeline Envelope TCA 3 (Scuff Hall and nearby properties)	Pipeline stringing (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
NSRs in vicinity of Pipeline Envelope TCA 4 (Field Farm)	Pipeline stringing (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Moderate Adverse (significant).	Moderate Adverse (significant).
NSRs in vicinity of Ouse River Crossing (Rusholme Hall)	24 hr construction works (HDD) for crossing (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Moderate Adverse(significant) for Night time works and Minor Adverse (not significant) for daytime works	Moderate Adverse(significant) for Night time works and Minor Adverse (not significant) for daytime works
NSRs in the vicinity of Railway at Brind (Brind Lane Farm)	24 hr construction works (Mircotunnel for crossing (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant) for Night time and daytime works	Minor Adverse (not significant) for Night time and daytime works

Summary of Noise Assessment Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (with Pipeline Envelope)	Likely Significance of Effects (with Likely Pipeline)
NSRs along Main Street Knedlington	Construction Traffic movements (Temporary)	Careful management of construction traffic movements	Type 1 Assessment Minor Adverse (not significant) on Average and Peak Saturday and Negligible (not significant) the remainder of the construction period Type 2 Assessment, Minor Adverse (not significant) on weekdays and Saturdays to maximum of 40 days during Pipeline construction. Negligible (not significant) the remainder of the construction period	Type 1 Assessment Minor Adverse (not significant) on Average and Peak Saturday and Negligible (not significant) the remainder of the construction period Type 2 Assessment, Minor Adverse (not significant) on weekdays and Saturdays to maximum of 40 days during Pipeline construction. Negligible (not significant) the remainder of the construction period
NSRs along A63 (vicinity of Howden)	Construction Traffic movements (Temporary)	Careful management of construction traffic movements	Type 2 Assessment, Minor Adverse (not significant) on weekdays and Saturdays to maximum of 16 days during Pipeline construction. Negligible (not significant) the remainder of the construction period	Type 2 Assessment Minor Adverse (not significant) on weekdays and Saturdays to maximum of 16 days during Pipeline construction. Negligible (not significant) the remainder of the construction period
NSRs along B1288 Wood Lane	Construction Traffic movements (Temporary)	Careful management of construction traffic movements	Type 2 Assessment, Minor Adverse (not significant) on weekdays and Saturdays to maximum of 30 days during Pipeline construction. Negligible (not significant) the remainder of the construction period	Type 2 Assessment, Minor Adverse (not significant) on weekdays and Saturdays to maximum of 30 days during Pipeline construction. Negligible (not significant) the remainder of the construction period
NSRs along B1228 St Lane	Construction Traffic movements (Temporary)	Careful management of construction traffic movements	Type 2 Assessment, Minor Adverse (not significant) on weekdays and Saturdays to maximum of 14 days during Pipeline construction. Negligible (not significant)	Type 2 Assessment, Minor Adverse (not significant) on weekdays and Saturdays to maximum of 14 days during Pipeline construction. Negligible (not significant) the remainder of the construction period.

Summary of Noise Assessment Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (with Pipeline Envelope)	Likely Significance of Effects (with Likely Pipeline)
			the remainder of the construction period.	
NSRs along A163 (vicinity of Foggathorpe)	Construction Traffic movements (Temporary)	Careful management of construction traffic movements	Type 2 Assessment, Minor Adverse (not significant) on Saturdays to maximum of 2 Saturdays Pipeline construction, and negligible (not significant) for weekdays and the remainder of Saturdays within the construction period.	Type 2 Assessment, Minor Adverse (not significant) on Saturdays to maximum of 2 Saturdays Pipeline construction, and negligible (not significant) for weekdays and the remainder of Saturdays within the construction period.
NSRs in Vicinity of PIG Trap site	Construction works	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
	Maintenance works – including maintenance venting	70 dB $L_{Aeq,1hr}$ noise limit during the venting at the nearest existing NSR. Limited 1 hour twice per year between the hours of 0700 and 1900 Monday to Friday.	Minor Adverse (not significant) during venting, negligible (not significant) the remainder of the time.	Minor Adverse (not significant) during venting, negligible (not significant) the remainder of the time.
NSRs in the vicinity of the Multi-junction site.	Construction Works	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).

Summary of Noise Assessment Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (with Pipeline Envelope)	Likely Significance of Effects (with Likely Pipeline)
	Maintenance works including venting	70 dB $L_{Aeq,1hr}$ noise limit during the venting at the nearest existing NSR. Limited 1 hour twice per year between the hours of 0700 and 1900 Monday to Friday.	Minor Adverse (not significant) during venting, Negligible (not significant) the remainder of the time.	Minor Adverse (not significant) during venting, Negligible (not significant) the remainder of the time.
Tollingham Block Valve	Construction Works	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
	Maintenance works including venting	70 dB $L_{Aeq,1hr}$ noise limit during the venting at the nearest existing NSR. Limited 1 hour twice per year between the hours of 0700 and 1900 Monday to Friday.	Minor Adverse (not significant) during venting, negligible (not significant) the remainder of the time.	Minor Adverse (not significant) during venting, negligible (not significant) the remainder of the time.
Tollingham Block Valve Site to Dalton Block Valve Site Section-				
3 NSRs Within 50m of Pipeline Envelope Figures 13.7 to 13.9 show the location of NSRs.	Construction of the Pipeline (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Moderate (significant) to Minor Adverse (not significant).	Moderate (significant) to Minor Adverse (not significant). There are no NSRs within 50m of Likely Pipeline.
7 NSRs located between 50 and 100 m from Pipeline Envelope Figures 13.7 to 13.9 show the location of NSRs	Construction of the Pipeline (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Moderate (significant) to Minor Adverse (not significant).	Moderate (significant) to Minor Adverse (not significant). There are 2 NSRs between 50-100m of likely pipeline.

Summary of Noise Assessment Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (with Pipeline Envelope)	Likely Significance of Effects (with Likely Pipeline)
19 NSRs located between 100- 200 m from Pipeline Envelope Figures 13.7 to 13.9 show the location of NSRs	Construction of the Pipeline (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant). There are 18 NSRs within 100-200 m of Likely Pipeline
13 NSRs located between 200- 300 m from Pipeline Envelope Figures 13.7 to 13.9 show the location of NSRs	Construction of the Pipeline (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant). There are 15 NSRs within 200-300 m of Likely Pipeline.
8 NSRs Within 50m of Flexible Drainage Areas. Figures 13.16 and 13.17 show the location of the NSRs	Pipeline drainage works (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
3 NSRs located between 50 and 100 m from the Flexible Drainage Areas Figures 13.16 and 13.17 show the location of the NSRs	Pipeline drainage works (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).

Summary of Noise Assessment Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (with Pipeline Envelope)	Likely Significance of Effects (with Likely Pipeline)
1 NSR located between 100 and 200 m from the Flexible Drainage Areas Figures 13.16 and 13.17 show the location of the NSRs	Pipeline drainage works (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
6 NSRs located between 200 and 300 m from the Flexible Drainage Areas Figures 13.16 and 13.17 show the location of the NSRs	Pipeline drainage works (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
NSRs in vicinity of Dalton Block Valve TCA (Wold House)	Pipeline stringing (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor adverse (not significant).	Minor adverse (not significant).
NSRs in vicinity of Pipeline Envelope TCA 5 (The Old House Farm)	Pipeline stringing (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Moderate Adverse (significant).	Minor Adverse (not significant).
NSRs along Skiff Lane	Construction Traffic accessing Tollingham Construction Compound (Temporary) and Pipeline Construction Traffic in the vicinity	Careful management of construction traffic movements	Moderate adverse (significant) effects are predicted due to the combined effect of traffic accessing Tollingham Construction Compound and Pipeline Construction Traffic in the vicinity and would last at maximum of 98 days. For the rest of the Onshore construction programme the effects are Negligible (not significant) on weekdays and Minor Adverse on Saturdays.	Moderate adverse (significant) effects are predicted due to the combined effect of traffic accessing Tollingham Construction Compound and Pipeline Construction Traffic in the vicinity and would last at maximum of 98 days. For the rest of the Onshore construction programme the effects are Negligible (not significant) on weekdays and Minor Adverse on Saturdays.
NSRs along Skiff Lane, in vicinity of Tollingham Construction	Deliveries, unloading and loading activities. Movement of equipment	Careful management of site. Not dropping items from height. Restriction of opening hours	Minor Adverse (not significant).	Minor Adverse (not significant).

Summary of Noise Assessment Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (with Pipeline Envelope)	Likely Significance of Effects (with Likely Pipeline)
Compound				
NSRs along Main Cliffe Lane	Construction Traffic movements (Temporary)	Careful management of construction traffic movements	Minor Adverse (not significant) on peak Saturday and Negligible(not significant) the remainder of the construction period	Minor Adverse (not significant) on peak Saturday and Negligible (not significant) the remainder of the construction period
NSRs along Un Named Road (west of Lund) ID 32 on Figure 14.2	Construction Traffic movements (Temporary)	Careful management of construction traffic movements	Type 1 assessment Minor Adverse(not significant) on peak Saturday and Negligible (not significant) the remainder of the construction period Type 2 assessment major adverse (significant) effects for the combined effects of construction traffic for the construction of Dalton Block Valve and Pipeline construction traffic in the vicinity, which will last for a maximum of 8 days, the rest of the time the effects for the construction traffic associated with Dalton Block Valve will be Minor Adverse (not significant).	Type 1 Minor Adverse (not significant) on peak Saturday and Negligible(not significant) the remainder of the construction period Type 2 assessment major adverse (significant) effects for the combined effects of construction traffic for the construction of Dalton Block Valve and Pipeline construction traffic in the vicinity, which will last for a maximum of 8 days, the rest of the time the effects for the construction traffic associated with Dalton Block Valve will be Minor Adverse (not significant).
NSRs in the vicinity of the Dalton Block Valve	Construction Works	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).

Summary of Noise Assessment Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (with Pipeline Envelope)	Likely Significance of Effects (with Likely Pipeline)
	Maintenance works including venting	70 dB $L_{Aeq,1hr}$ noise limit during the venting at the nearest existing NSR. Limited 1 hour twice per year between the hours of 0700 and 1900 Monday to Friday.	Minor Adverse(not significant) during venting, Negligible (not significant) the remainder of the time.	Minor Adverse (not significant) during venting, Negligible (not significant) the remainder of the time.
Dalton Block Valve Site to Skerne Block Valve Site Section				
5 NSRs Within 50m of Pipeline Envelope Figures 13.9 to 13.12 show the location of NSRs.	Construction of the Pipeline (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Moderate (significant) to Minor Adverse (not significant).	Moderate (significant) to Minor Adverse (not significant). There are no NSRs within 50 m of the Likely Pipeline.
7 NSRs located between 50 and 100 m from Pipeline Envelope Figures 13.9 to 13.12 show the location of NSRs	Construction of the Pipeline (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Moderate (significant) to Minor Adverse (not significant).	Moderate (significant) to Minor Adverse (not significant). There are 7 NSRs between 50 and 100 m of the Likely Pipeline.
22 NSRs located between 100- 200 m from Pipeline Envelope Figures 13.9 to 13.12 show the location of NSRs	Construction of the Pipeline (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant) There are 6 NSRs between 100 and 200 m of the Likely Pipeline.
45 NSRs located between 200- 300 m from Pipeline Envelope Figures 13.9 to 13.12 show the location of NSRs	Construction of the Pipeline (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant) There are 9 NSRs between 200 and 300 m of the Likely Pipeline.
1 NSRs Within 50m of	Pipeline drainage works	Follow the advice in BS5228 and good	Minor Adverse (not significant).	Minor Adverse (not significant).

Summary of Noise Assessment Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (with Pipeline Envelope)	Likely Significance of Effects (with Likely Pipeline)
Flexible Drainage Areas. Figures 13.18 and 13.19 show the location of the NSRs	(Temporary)	communication with the local community and council.		
2 NSRs located between 50 and 100 m from the Flexible Drainage Areas. Figures 13.18 and 13.19 show the location of the NSRs	Pipeline drainage works (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
1 NSR located between 100 and 200 m from the Flexible Drainage Areas. Figures 13.18 and 13.19 show the location of the NSRs	Pipeline drainage works (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
3 NSRs located between 200 and 300 m from the Flexible Drainage Areas. Figures 13.18 and 13.19 show the location of the NSRs	Pipeline drainage works (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
NSRs in vicinity of Skerne Block Valve TCA (Copper Hall Farm)	Pipeline stringing (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
NSRs along A164 (vicinity of Kelleythorpe)	Construction Traffic accessing Driffield Construction Compound (Temporary)	Careful management of construction traffic movements	Negligible (not significant).	Negligible (not significant).
NSRs Lane, in vicinity	Deliveries, unloading	Careful management of site. Not	Moderate (significant) to Minor Adverse	Moderate (significant) to Minor Adverse (not significant).

Summary of Noise Assessment Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (with Pipeline Envelope)	Likely Significance of Effects (with Likely Pipeline)
of Driffield Construction Compound	and loading activities. Movement of equipment	dropping items from height. Restriction of opening hours	(not significant).	
NSRs along Driffield Road (vicinity of Skerne)	Construction Traffic movements (Temporary)	Careful management of construction traffic movements	Type 2 assessment moderate adverse (significant) effects for the combined effects of construction traffic for the construction of Skerne Block Valve and Pipeline construction traffic in the vicinity, which will last for a maximum of 42 days, the rest of the time the effects for the construction traffic associated with Skerne Block Valve will be Negligible (not significant).	Type 2 assessment moderate adverse (significant) effects for the combined effects of construction traffic for the construction of Skerne Block Valve and Pipeline construction traffic in the vicinity, which will last for a maximum of 42 days, the rest of the time the effects for the construction traffic associated with Skerne Block Valve will be Negligible (not significant).
NSRs in vicinity of Driffield to Hutton Cranswick Railway (Orchard Lane)	24 hr construction works (microtunnel) for crossing (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant) for Night time and daytime works	Minor Adverse (not significant) for Night time and daytime works
NSRs in the vicinity of the Skerne Block Valve	Construction Works	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
	Maintenance works including venting	70 dB $L_{Aeq,1hr}$ noise limit during the venting at the nearest existing NSR. Limited 1 hour twice per year between the hours of 0700 and 1900 Monday to Friday.	Minor Adverse (not significant) during venting, negligible (not significant) the remainder of the time.	Minor Adverse (not significant) during venting, negligible(not significant) the remainder of the time.
Skerne Block Valve Site to Barmston Pumping Station Site Section-				
3 NSRs located between 50 and 100 m from Pipeline Envelope Figures	Construction of the Pipeline (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Moderate (significant) to Minor Adverse (not significant).	Moderate (significant) to Minor Adverse (not significant). There are 5 NSRs located between 50 and 100 m from the Likely Pipeline

Summary of Noise Assessment Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (with Pipeline Envelope)	Likely Significance of Effects (with Likely Pipeline)
13.12 to 13.13 show the location of NSRs				
7 NSRs located between 100- 200 m from Pipeline Envelope Figures 13.12 to 13.13 show the location of NSRs	Construction of the Pipeline (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant). There are 2 NSRs located between 100 and 200 m from the Likely Pipeline
23 NSRs located between 200- 300 m from Pipeline Envelope Figures 13.12 to 13.13 show the location of NSRs	Construction of the Pipeline (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Negligible/ Minor Adverse (not significant).	Negligible/ Minor Adverse (not significant). There are 12 NSRs located between 200 and 300 m from the Likely Pipeline
1 NSR Within 50m of Flexible Drainage Areas. Figures 13.19 to 13.20 show the location of the NSRs	Pipeline drainage works (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
3 NSRs located between 200 and 300 m from the Flexible Drainage Areas Figures 13.19 to 13.20 show the location of the NSRs	Pipeline drainage works (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
# NSRs in vicinity of Pipeline TCA 6 (The Old Farm House)	Pipeline stringing (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
NSRs in vicinity of Pipeline TCA 7 (Trout Inn)	Pipeline stringing (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).

Summary of Noise Assessment Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (with Pipeline Envelope)	Likely Significance of Effects (with Likely Pipeline)
NSRs in vicinity of Pipeline TCA 8 (Quarry Bungalow)	Pipeline stringing (Temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).
NSRs in vicinity of Hull River Crossing (Trout Inn)	24 hr construction works (Mircotunnel) for crossing (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Moderate Adverse (significant) for Night time works and Minor Adverse (not significant) for daytime works.	Moderate Adverse (significant) for Night time works and Minor Adverse (not significant) for daytime works.
NSRs in vicinity of Driffield Canal Crossing (Trout Inn)	24 hr construction works (Mircotunnel) for crossing (temporary)	Follow the advice in BS5228 and good communication with the local community and council.	Moderate Adverse (significant) for Night time works and Minor Adverse (not significant) for daytime works.	Moderate Adverse (significant) for Night time works and Minor Adverse (not significant) for daytime works.
NSRs along B1249	Construction Traffic movements (Temporary)	Careful management of construction traffic movements	Type 2 Assessment, Minor Adverse (not significant) on weekdays and Saturdays to maximum of 76 days due the combined effects of construction traffic for Barmston Pumping Station and traffic associated with pipeline construction in the area. Negligible (not significant) the remainder of the construction period	Type 2 Assessment, Minor Adverse (not significant) on weekdays and Saturdays to maximum of 76 days due the combined effects of construction traffic for Barmston Pumping Station and traffic associated with pipeline construction in the area. Negligible (not significant) the remainder of the construction period
NSRs along B1249 Main Street (vicinity of Frodingham)	Construction Traffic movements (Temporary)	Careful management of construction traffic movements	Type 2 Assessment, Minor Adverse (not significant) on weekdays and Saturdays to maximum of 34 days due the combined effects of construction traffic for Barmston Pumping Station and traffic associated with pipeline construction in the area. Negligible (not significant) the remainder of the construction period	Type 2 Assessment, Minor Adverse (not significant) on weekdays and Saturdays to maximum of 34 days due the combined effects of construction traffic for Barmston Pumping Station and traffic associated with pipeline construction in the area. Negligible (not significant) the remainder of the construction period
NSRs in the vicinity of the Barmston Pumping Station	Construction Works	Follow the advice in BS5228 and good communication with the local community and council.	Minor Adverse (not significant).	Minor Adverse (not significant).

Summary of Noise Assessment Residual Effects				
Receptor/Source	Sources of effect	Mitigation	Likely Significance of Effects (with Pipeline Envelope)	Likely Significance of Effects (with Likely Pipeline)
	Maintenance works including venting	70 dB $L_{Aeq,1hr}$ noise limit during the venting at the nearest existing NSR. Limited 1 hour twice per year between the hours of 0700 and 1900 Monday to Friday.	Minor Adverse (not significant) during venting, Negligible (not significant) the remainder of the time	Minor Adverse (not significant) during venting, Negligible (not significant) the remainder of the time.
	Operational Noise	Noise limits set, not to exceed existing background noise levels at nearest existing NSR.	Negligible (not significant).	Negligible (not significant).
	Operational Low Frequency Noise	Consider the Low frequency risk factors in the detailed design of the pumping station	Negligible (not significant).	Negligible (not significant).
Barmston Pumping Station to Mean Low Water Spring (MLWS)				
Transient Beach Users	Landfall of Pipeline and construction of cofferdam and Pipeline line on the beach to tie in with the off shore scheme	Follow the advice in BS5228	Minor Adverse (not significant).	Minor Adverse (not significant).
Nearest NSRs (Sands Lane) and Barmston Caravan Park	Landfall of Pipeline and construction of cofferdam and Pipeline line on the beach to tie in with the off shore scheme	Follow the advice in BS5228 and good communication with the local community and council.	Minor adverse (not significant).	Minor Adverse (not significant).

1.9 TRAFFIC TRANSPORT AND ACCESS (DOCUMENT 6.14) (BASED ON HGV PEAK WEEK WEEKDAY ASSESSMENT) SUMMARY OF RESIDUAL EFFECTS

Traffic and Transport Assessment (based on TYPE 1 ASSESSMENT - HGV Peak Week weekday assessment and TYPE 2 ASSESSMENT)				
Receptor/Source	Sources of effect	Sensitivity/Value of receptor and Magnitude of effect.	Mitigation	Likely Significance of Effects (Pipeline Envelope or Likely Pipeline).
All Pipeline Sections				
All Automatic Traffic Count (ATC) Locations	Movement of materials and plant associated with construction OF Pipeline and AGIs and Barmston Pumping Station(temporary).	Some receptors are no longer affected because of changes to the on the Construction Traffic Route Plan therefore negligible impact. Where survey points had base HGV flow of less than 3 HGVs per hour the impact has not been assessed.	Construction HGV traffic limited to certain roads.	Minor adverse (Not Significant)
Camblesforth Multi-junction Site to Tollingham Block Valve Site Section (including The White Rose CCS Connection)				
ATC locations 1-12	Movement of materials and plant associated with construction (temporary).	Only sites 1,3,4 and 6-12 are on the Traffic Route plan but sites 3, 4 and 8 have base HGV flow of 36 or less. The increase in HGV movements is less than 30% at sites 1,6,7,9-12 and sites 3,4 and 8 have a low base HGV flow or short duration therefore the effect is not significant. Using the Stage 2 Approach to Assessment, Moderate Adverse Effect at Site 12 due to combined effect of Pipeline construction and Temporary Construction Compound.	Agreed Construction Routes Plan, EMP. Monitoring at site 12 during construction because of proximity to Tollingham TCC.	Moderate Adverse effect for Site 12 (significant) but for less than six months remaining sites have a negligible effect (Not significant)
Tollingham Block Valve Site to Dalton Block Valve Site Section-				
ATC locations 13-30	Movement of materials and plant associated with construction (temporary).	Survey points 14, 24, 26, 27, 28, 29 and 30 are not now on the Traffic Route Plan therefore no impact. Based on Type 1 assessment all sites have less than 30% weekday increase in HGV movements. Based on Type 2 Assessment, site 16 has 34% increase in HGVs but given likely duration of approx 12 days are only temporary and therefore the effects are Negligible (not Significant)	Agreed Routes Plan, EMP.	Negligible (Not Significant)

Traffic and Transport Assessment (based on TYPE 1 ASSESSMENT - HGV Peak Week weekday assessment and TYPE 2 ASSESSMENT)				
Receptor/Source	Sources of effect	Sensitivity/Value of receptor and Magnitude of effect.	Mitigation	Likely Significance of Effects (Pipeline Envelope or Likely Pipeline).
Dalton Block Valve Site to Skerne Block Valve Site Section				
ATC locations 31-53	Movement of materials and plant associated with construction (temporary).	<p>Based on Type 1 Assessment, the following sites have HGV increases of less than 30% (33,34,36,37,38,39,40,41, 42,43,44,45,46, 48,49,50 and 52).</p> <p>Site 32 shows 50% increase but over very low base of 8 HGVs – Negligible, not significant.</p> <p>Site 35 shows 51% increase over base of 178 HGVs - Moderate, Significant.</p> <p>Based on Type 2 Assessment – Site 52 showed 100% increase over base of 60 HGVs with duration of 21 days (Negligible not significant). All other sites showed effects that were Negligible, Not Significant due to low base flow in 2018 and/or short duration of impact (between 8 days and 42 days)</p>	Agreed Routes Plan, EMP.	Moderate Adverse effect for Site 35 (significant) but for less than 6 months, the remaining sites have a negligible (not significant) effect.
Skerne to Barmston (including Barmston Pumping Station to MLWS)				
ATC locations 54-69	Movement of materials and plant associated with construction (temporary).	<p>Based on Type 1 Assessment, the following sites have HGV increases of less than 30% (54-59).</p> <p>Site 60 shows 47% increase but over very low base of 14 HGVs – Negligible, not significant.</p> <p>Sites 61, 63, 64 and 65 had increases of less than 30% in HGVs.</p> <p>Based on Type 2 Assessment – site 59 had 59% increase over base of 59 HGVs for period of 34 days therefore Negligible, Not Significant due to low base flow in 2018 and/or short duration of impact .</p>	Agreed Routes Plan, EMP.	Negligible impact (Not Significant)

1.10 SOCIO-ECONOMICS (DOCUMENT 6.15) SUMMARY OF RESIDUAL EFFECTS

Summary of Socio-Economic, Recreational and Tourism Residual Effects			
Receptor/Source	Sources of Effect	Mitigation	Likely Significance of Residual Effects
Tourist Attractions and Amenities			
Users of Carlton Towers	Increased construction traffic would cause disruption to the road network.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption.	Negligible – Not Significant
Users of Carlton Towers Estate	Potential for severance effects during construction and potential disruption to shooting activities. Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects. Potential for adverse effects on commercial shoots from Multi-junction.	Landowners will be compensated for any resultant losses incurred as a direct consequence of the works. Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities. Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete. Careful selection of screening, management of shoots and liaison with the Estate.	Negligible – Not Significant
Users of Barlow Common Nature Reserve	Increased construction traffic would cause disruption to the local road network	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption.	Negligible – Not Significant
Users of California Garden Centre	Increased construction traffic would cause disruption to the local road network.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption.	Negligible – Not Significant
Users of Howden Minster	Increased construction traffic would cause disruption to the local road network.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption.	Minor Adverse – Not Significant
Users of Shire Hall	Increased construction traffic would cause disruption to the local road network.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption.	Minor Adverse – Not Significant
Users of Boothferry Golf Club	Increased construction traffic would cause disruption to the local road network.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption.	Negligible – Not Significant
Users of Eastrington Ponds	Increased construction traffic would cause disruption to the local road network.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will	Negligible – Not Significant

Summary of Socio-Economic, Recreational and Tourism Residual Effects			
Receptor/Source	Sources of Effect	Mitigation	Likely Significance of Residual Effects
		also be devised to limit disruption.	
Users of North Cliff Wood Nature Reserve	Increased construction traffic would cause disruption to the local road network.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption.	Negligible – Not Significant
Users of Houghton Moor Shoot	Increased construction traffic would cause disruption to the local road network.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption.	Negligible– Not Significant
Users of Mount Pleasant Antiques Centre	Increased construction traffic would cause disruption to the local road network.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption.	Negligible – Not Significant
Users of Kiplingcotes Racecourse	Pipeline Envelope is routed across Racecourse route. Increased construction traffic would cause disruption to the local road network.	Careful timing and management of construction activities to avoid the Kiplingcotes Derby will ensure no effects will occur. The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption.	Minor Adverse– Not Significant
Dalton Estate	Increased construction traffic would cause disruption to the local road network.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption.	Negligible – Not Significant
Dalton Estate - Shooting	Increased construction traffic would cause disruption to the local road network.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption.	Negligible – Not Significant
Users of Kelleythorpe Trout Lake	Increased construction traffic would cause disruption to the local road network in relation to Temporary Construction Compound. A Temporary Construction Compound is located less than a 1km away and could cause effects on users' amenity during construction from increased dust, construction noise and temporary visual effects.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption. Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities. Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete	Negligible– Not Significant
Users of Driffield Showground	Increased construction traffic would cause disruption to the local road network. A Temporary Construction Compound is located less than a 1km away and could cause effects on users' amenity during	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption. Best practice methods detailed within the COCP will be	Minor Adverse - Not Significant

Summary of Socio-Economic, Recreational and Tourism Residual Effects			
Receptor/Source	Sources of Effect	Mitigation	Likely Significance of Residual Effects
	construction from increased dust, construction noise and temporary visual effects.	implemented to minimise effects from construction activities. Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete	
Users of Driffield Golf Course	Increased construction traffic would cause disruption to the local road network. A Temporary Construction Compound is located less than a 1km away and could cause effects on users' amenity during construction from increased dust, construction noise and temporary visual effects.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption. Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities. Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete	Negligible – Not Significant
Users of Driffield Cricket Club	Increased construction traffic would cause disruption to the local road network.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption.	Negligible– Not Significant
Users of Driffield Rugby Union Club	Increased construction traffic in relation to Temporary Construction Compound would cause disruption to the local road network. A Temporary Construction Compound is located less than a 1km away and could cause effects on users' amenity during construction from increased dust, construction noise and temporary visual effects.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption. Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities. Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete	Negligible – Not Significant
Users of Mulberry Whin Fly Fishing	Increased construction traffic would cause disruption to the local road network.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption.	Negligible – Not Significant
Users of Wansford Fishery	Increased construction traffic would cause disruption to the local road network..	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption.	Negligible – Not Significant
Users of Barmston Beach Holiday Park	Temporary closure of beach and closures of nearby PRowS would affect resident's amenity. Increased construction traffic would cause disruption to the local road network.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption. Closures of PRowS will only be temporary, until relevant	Minor Adverse – Not Significant

Summary of Socio-Economic, Recreational and Tourism Residual Effects			
Receptor/Source	Sources of Effect	Mitigation	Likely Significance of Residual Effects
		<p>section of the Pipeline has been constructed, then all PRoW and permissive routes will be open and fully accessible.</p> <p>Best practice methods and the COCP will ensure disruption and amenity effects to users of Barmston Sands will be minimised.</p>	
Users of Gransmoor Lodge Park	<p>Temporary closure of beach and closures of nearby PRoW would affect resident's amenity.</p> <p>Increased construction traffic would cause disruption to the local road network.</p>	<p>The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption. Closures of PRoWs will only be temporary, until relevant section of the Pipeline has been constructed, then all PRoWs and permissive routes will be open and fully accessible.</p> <p>Good practice methods and the COCP will ensure disruption and amenity effects to users of Barmston Sands will be minimised.</p>	Negligible – Not Significant
Users of Barmston Sands	<p>Construction would temporarily adversely affect amenity value.</p> <p>Temporary closure of permissive routes and section of the beach would effect user's amenity.</p> <p>Increased construction traffic would cause disruption to the local road network.</p>	<p>The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption. PRoW diversions will be managed and advertised, as agreed with the appropriate authorities.</p> <p>Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities.</p>	Minor Adverse – Not Significant
Users of Fraisthorpe Sands	<p>Temporary closure of section of Barmston Sands (and therefore closure of permissive routes) could cause disruption to users.</p> <p>Potential for effects on users' amenity during construction from increased dust, construction noise and temporary visual effects.</p>	<p>PRoW diversions will be managed and advertised, as agreed with the appropriate authorities.</p> <p>Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities.</p>	Minor Adverse – Not Significant
Community Facilities			
Users of Churches/Places of Worship and Village Halls	<p>Increased construction traffic would cause disruption to the local road network.</p> <p>Severance would cause longer journeys and could cause people to avoid using local amenities.</p>	<p>The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption. PRoW diversions will be managed and advertised, as agreed with the appropriate</p>	Negligible– Not Significant

Summary of Socio-Economic, Recreational and Tourism Residual Effects			
Receptor/Source	Sources of Effect	Mitigation	Likely Significance of Residual Effects
	Temporary closures of PRowS would cause disruption to users, and could increase journey times.	authorities.	
Users of Schools and Nurseries	Increased construction traffic would cause disruption to the local road network. Severance would cause longer journeys and could cause people to avoid using local amenities. Temporary closures of PRowS would cause disruption to users, and could increase journey times.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption. PRowS diversions will be managed and advertised, as agreed with the appropriate authorities.	Minor Adverse - Not Significant
Local Businesses and Service Providers, including those in the Hospitality Industry	Increased construction traffic would cause disruption to the local road network and could cause people to avoid local amenities. Severance would cause longer journeys and could cause people to avoid using local amenities. Increased workforce personnel in the area would increase expenditure in the area.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption by construction traffic.	Negligible – Not Significant
Local Economy and Employment	Significant investment in the area will result in a boost to the local economy. This will result from purchase of goods and services, local supply chains and increased local expenditure. Employment opportunities in the area will be created throughout the lifetime of the Pipeline, but primarily during construction. This will result in upskilling and improved employment rates in the region.	None required.	Minor Beneficial
Public Rights of Way			
Users of Public Rights of Way, Long Distance Paths, Permissive Routes and Cycle Routes within the vicinity of the Pipeline Envelope	Increased construction traffic would cause disruption to local road network and users, causing temporary delays and severance effects. Potential for effects on users' amenity during construction from increased dust, construction noise and temporary visual effects.	The COCP will mitigate as far as practicable any disruption caused by construction traffic. A Traffic Management Plan will also be devised to limit disruption. PRowS diversions will be managed and advertised, as agreed with the appropriate authorities. Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities. Reinstatement and replanting works will be carried out to	Negligible effects will be experienced on local footpaths – Not significant. Minor adverse effects will be experienced on national routes and long distance paths – Not Significant.

Summary of Socio-Economic, Recreational and Tourism Residual Effects			
Receptor/Source	Sources of Effect	Mitigation	Likely Significance of Residual Effects
		minimise effects on visual amenity, once operational.	
Users of National Cycle Route 65 / Trans Pennine Trail (East)	Temporary closure of Cycle Route.	PRoW diversions will be managed and advertised, as agreed with the appropriate authorities.	Minor Adverse – Not Significant
Users of National Cycle Route 164	Temporary closure of Cycle Route	PRoW diversions will be managed and advertised, as agreed with the appropriate authorities.	Minor Adverse – Not Significant
Users of National Cycle Route 66 / Users of Yorkshire Wolds Cycle Route	Temporary closure of Cycle Route	PRoW diversions will be managed and advertised, as agreed with the appropriate authorities.	Minor Adverse – Not Significant
Users of National Cycle Route 1	Temporary closure of Cycle Route.	PRoW diversions will be managed and advertised, as agreed with the appropriate authorities.	Minor Adverse – Not Significant
Users of Way of the Roses	Temporary closure of Cycle Route	PRoW diversions will be managed and advertised, as agreed with the appropriate authorities.	Minor Adverse – Not Significant
Users of Wilberforce Way	Temporary closure of PRoW.	PRoW diversions will be managed and advertised, as agreed with the appropriate authorities.	Minor Adverse – Not Significant
Users of Hudson Way	Temporary closure of PRoW.	PRoW diversions will be managed and advertised, as agreed with the appropriate authorities.	Minor Adverse – Not Significant
Users of Minster Way	Temporary closure of PRoW.	PRoW diversions will be managed and advertised, as agreed with the appropriate authorities.	Minor Adverse – Not Significant
Users of Long Drax Footpath (FP) 35.47/6/1	Temporary Closure of PRoW due to Temporary Construction Area for Drax AGI during construction. Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects. Effects on user's visual amenity during operation due to potential visibility of Drax AGI.	PRoW diversions will be managed and advertised, as agreed with the appropriate authorities. Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities. Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once operational.	Negligible – Not Significant
Users of Long Drax FP 35.47/1/1	Temporary Closure of PRoW due to Temporary Construction Area for Drax AGI during construction. Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects.	PRoW diversions will be managed and advertised, as agreed with the appropriate authorities. Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once operational.	Negligible – Not Significant

Summary of Socio-Economic, Recreational and Tourism Residual Effects			
Receptor/Source	Sources of Effect	Mitigation	Likely Significance of Residual Effects
	Effects on user's visual amenity during operation due to potential visibility of Drax AGI.		
Users of Long Drax FP 35.47/8/1	Temporary closure of PRow.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities.	Negligible – Not Significant
Users of Long Drax FP 35.47/4/1	Temporary closure of PRow.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities.	Negligible – Not Significant
Users of Long Drax FP 35.47/5/1	Route of Onshore Scheme could cause effects on users' amenity during construction from increased dust, construction noise and temporary visual effects, where PRow joins Main Road.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities. Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities.	Negligible – Not Significant
Users of Drax FP 35.26/7/1	Temporary closure of PRow (in current location).	PRow diversions will be managed and advertised, as agreed with the appropriate authorities.	Negligible – Not Significant
Users of Drax FP 35.26/9/1	Temporary closure of PRow.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities.	Negligible – Not Significant
Camblesforth FP 35.17/6/2	Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects from Camblesforth Multi-junction.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities. Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities.	Negligible – not significant.
Drax FP 35.26/10/1	Potential for Camblesforth Multi-junction to be visible along this footpath.	Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete.	Negligible – not significant.
Drax FP 35.26/11/1	Potential for Camblesforth Multi-junction to be visible along this footpath.	Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete.	Negligible – not significant.
Users of Drax FP 35.26/13/1	Temporary closure of PRow. Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects from	PRow diversions will be managed and advertised, as agreed with the appropriate authorities.	Negligible – Not Significant

Summary of Socio-Economic, Recreational and Tourism Residual Effects			
Receptor/Source	Sources of Effect	Mitigation	Likely Significance of Residual Effects
	Temporary Construction Area.	Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities.	
Users of Newland FP 35.49/1/2	Potential for effects on users' amenity during construction from increased dust, construction noise and temporary visual effects where PRoW joins with Drax FP 35.26/13/1.	PRoW diversions will be managed and advertised, as agreed with the appropriate authorities. Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities.	Negligible – Not Significant
Users of Newland FP 35.49/2/2	Temporary closure of PRoW. Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects from Temporary Construction Area	PRoW diversions will be managed and advertised, as agreed with the appropriate authorities. Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities.	Negligible – Not Significant
Users of Barmby-on-the-Marsh FP No.3	Temporary closure of PRoW. Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects from Temporary Construction Area	PRoW diversions will be managed and advertised, as agreed with the appropriate authorities. Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities. Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete.	Negligible – Not Significant
Users of Asselby FP No.2	Temporary closure of PRoW. Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects from Flexible Drainage Area.	PRoW diversions will be managed and advertised, as agreed with the appropriate authorities. Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete.	Negligible – Not Significant
Users of Asselby FP No.1	Temporary closure of PRoW.	PRoW diversions will be managed and advertised, as agreed with the appropriate authorities.	Negligible – Not Significant

Summary of Socio-Economic, Recreational and Tourism Residual Effects			
Receptor/Source	Sources of Effect	Mitigation	Likely Significance of Residual Effects
Users of Wressle FP No.10	Temporary closure of PRow.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities.	Negligible – Not Significant
Users of Wressle FP No. 6	Temporary closure of PRow.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities.	Negligible – Not Significant
Users of Wressle FP No. 7	Temporary closure of PRow.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities.	Negligible – Not Significant
Users of Eastrington Bridleway No.17	Temporary closure PRow.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities.	Negligible– Not Significant
Users of Spaldington FP No.12	Temporary closure of PRow.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities.	Negligible – Not Significant
Users of Market Weighton FP No.11	Temporary closure of PRow. Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects from Flexible Drainage Area.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities. Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete.	Negligible – Not Significant
Users of Market Weighton FP No. 7	Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects where PRow joins Sancton Road.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities. Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities.	Negligible – Not Significant
Users of Goodmanham FP No. 6	Temporary closure of PRow.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities.	Negligible – Not Significant
Users of Etton Bridleway No.5	Temporary closure of PRow.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities.	Negligible – Not Significant

Summary of Socio-Economic, Recreational and Tourism Residual Effects			
Receptor/Source	Sources of Effect	Mitigation	Likely Significance of Residual Effects
Users of Lund FP No.2	<p>Temporary closure of PRow during construction.</p> <p>Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects from Temporary Construction Area.</p> <p>Effects on users' visual amenity during operation from Dalton Block Valve.</p>	<p>PRow diversions will be managed and advertised, as agreed with the appropriate authorities.</p> <p>Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities.</p> <p>Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities.</p> <p>Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete.</p>	Negligible – Not Significant
Users of Watton FP No.2	<p>Temporary closure of PRow.</p> <p>Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects from Flexible Drainage Area.</p>	<p>PRow diversions will be managed and advertised, as agreed with the appropriate authorities.</p> <p>Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities.</p> <p>Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete</p>	Negligible – Not Significant
Users of Watton FP No. 20	<p>Temporary closure of PRow.</p> <p>Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects from Flexible Drainage Area.</p>	<p>PRow diversions will be managed and advertised, as agreed with the appropriate authorities.</p> <p>Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities.</p> <p>Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete.</p>	Negligible – Not Significant
Users of Hutton Cranswick FP No. 12	<p>Temporary closure of PRow. Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects from Flexible Drainage Area.</p>	<p>PRow diversions will be managed and advertised, as agreed with the appropriate authorities.</p> <p>Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities.</p> <p>Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete.</p>	Negligible – Not Significant
Users of Hutton Cranswick FP No. 11	<p>Temporary closure of PRow.</p> <p>Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects from</p>	<p>PRow diversions will be managed and advertised, as agreed with the appropriate authorities.</p> <p>Best practice methods detailed within the COCP will be</p>	Negligible – Not Significant

Summary of Socio-Economic, Recreational and Tourism Residual Effects			
Receptor/Source	Sources of Effect	Mitigation	Likely Significance of Residual Effects
	Flexible Drainage Area.	implemented to minimise effects from construction activities. Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete.	
Users of Hutton Cranswick FP No. 18	Temporary closure of PRow.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities.	Negligible – Not Significant
Users of Skerne and Wansford Bridleway and FP No. 9	Temporary closure of PRow. Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects from Flexible Drainage Area and Temporary Construction Area. Effects on users' visual amenity during operation from Skerne Block Valve.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities. Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities. Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete.	Negligible – Not Significant
Users of Skerne and Wansford Bridleway No. 8	Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects from Temporary Construction Area. Effects on users' visual amenity during operation from Skerne Block Valve.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities. Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities. Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete.	Negligible– Not Significant
Users of Skerne and Wansford Bridleway No. 7	Temporary closure of PRow. Effects on users' visual amenity during operation from Skerne Block Valve.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities. Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete.	Negligible– Not Significant
Users of Foston-on-the-Wolds FP No. 11	Temporary closure of PRow.	PRow diversions will be managed and advertised, as agreed with the appropriate authorities.	Negligible – Not Significant
Users of Barmston FP No.1	Effects on users' visual amenity during operation from Barmston Pumping Station.	Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete.	Negligible – not significant.

Summary of Socio-Economic, Recreational and Tourism Residual Effects			
Receptor/Source	Sources of Effect	Mitigation	Likely Significance of Residual Effects
Users of Barmston FP No. 2	<p>Temporary closure of PRow.</p> <p>Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects from Flexible Drainage Area and Temporary Construction Area.</p> <p>Effects on users' visual amenity during operation from Barmston Pumping Station.</p>	<p>PRow diversions will be managed and advertised, as agreed with the appropriate authorities.</p> <p>Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities.</p> <p>Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete</p>	Negligible – Not Significant
Users of Barmston FP No.3	<p>Temporary closure of PRow.</p> <p>Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects from Flexible Drainage Area and Temporary Construction Area.</p> <p>Effects on users' visual amenity during operation from Barmston Pumping Station.</p> <p>Effects on users' from operational noise of Pumping Station</p>	<p>PRow diversions will be managed and advertised, as agreed with the appropriate authorities.</p> <p>Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities.</p> <p>Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete.</p> <p>Careful plant selection and design will reduce noise levels.</p>	Negligible – Not Significant Effects are likely to be Minor adverse - Not Significant
Users of Barmston FP No.4	<p>Temporary closure of PRow.</p> <p>Effects on users' amenity during construction from increased dust, construction noise and temporary visual effects from Temporary Construction Area.</p> <p>Effects on users' visual amenity during operation from Barmston Pumping Station.</p> <p>Effects on users' from operational noise of Pumping Station</p>	<p>PRow diversions will be managed and advertised, as agreed with the appropriate authorities.</p> <p>Best practice methods detailed within the COCP will be implemented to minimise effects from construction activities.</p> <p>Reinstatement and replanting works will be carried out to minimise effects on visual amenity, once construction is complete.</p> <p>Careful plant selection and design of Barmston Pumping Station will reduce noise levels.</p>	Negligible – Not Significant Effects are likely to be Minor adverse - Not Significant