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	Minke Field Decommissioning Programmes			

Minke Field Decommissioning Programmes

Final Version

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Document Control

Approvals

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Revision Control

Revision No	Reference	Changes/Comments	Issue Date
1	First draft		28/08/18
2	Complete First draft	Updated with OPRED comments and CA/EA findings	21/12/08
3	Complete First draft	Updated with OPRED comments	21/02/19
4	Consultation Draft	Updated with OPRED comments	21/03/19
5	Post-Consultation Draft	Updated with comments from public consultation	09/05/19
6	Post-Consultation Draft	Updated with comments from OPRED (post-consultation)	10/06/19
7	Final Version	Updated with Letters of Support	26/08/19

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Terms and Abbreviations


Abbreviation	Explanation
CA	Comparative Assessment
CMS	Caister Murdoch System
CoP	Cessation of Production
CS	Continental Shelf
DP	Decommissioning Programme
DOB	Depth of Burial
DOC	Depth of Cover
EA	Environment Agency
E&A	Exploration and Appraisal
EAR	Environmental Appraisal Report
EHC	Electro-Hydraulic Control
ES	Environmental Statement
m	Metre
m ²	Square Metre
m ³	Cubic Metre
HSE	Health and Safety Executive
NFFO	National Federation of Fishermen's Organisations
NGT	Noordgastransport
NL	Netherlands
NORM	Naturally Occurring Radioactive Material
NUI	Normally Unattended Installation
OD	Outer Diameter
OGA	Oil and Gas Authority
OGUK	Oil & Gas UK
OPRED	Offshore Petroleum Regulator for Environment and Decommissioning, part of the Department for Business, Energy and Industrial Strategy)
PETS	Portal Environmental Tracking System
PON	Petroleum Operations Notice
PWA	Pipeline Works Authorisation

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SNS	Southern North Sea
Te	Tonnes
UK	United Kingdom
WHPS	Wellhead Protection Structure
XT	Christmas Tree

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1 EXECUTIVE SUMMARY

1.1 DECOMMISSIONING PROGRAMMES

This document contains the decommissioning programmes for both the Minke Field subsea installation and Minke Field pipelines that apply to the following Section 29 (S29) Notices, served under the Petroleum Act 1998:

1. Offshore Installations (Minke wellhead protection structure) in Block 44/24a;
2. Pipelines

1.2 REQUIREMENT FOR DECOMMISSIONING PROGRAMMES

Installation:


In accordance with the Petroleum Act 1998, the Section 29 notice holders of the Minke field (see Table 1.2) are applying to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED), part of the Department for Business, Energy and Industrial Strategy) to obtain approval for decommissioning the installation detailed in Section 2.1 of this programme. (See also Section 8 - Partner Letters of Support).

Pipelines:

In accordance with the Petroleum Act 1998, the Section 29 notice holders of the Minke pipelines (see Table 1.4) are applying to OPRED to obtain approval for decommissioning the pipelines detailed in Section 2.2 of this programme. (See also Section 8 – Partner Letters of Support).

In conjunction with public, stakeholder and regulatory consultation, the decommissioning programmes are submitted in compliance with national and international regulations and OPRED guidelines. The schedule outlined in this document allows for a three-and-a-half-year execution window, including the flushing, cleaning and disconnect, for the decommissioning project from second quarter 2019.

As a development in English offshore waters, the Minke field and associated infrastructure are subject to the National Marine Plan framework developed by the Department for Environment, Food and Rural Affairs (DEFRA) in conjunction with the Marine Management Organisation (MMO) under the Marine and Coastal Access Act 2009. The relevant management plan for the SNS, wherein the project area sits, is the East Offshore Management Plan ("the Plan"), this Plan was adopted in April 2014. The Plan takes a holistic approach to guiding sustainable development in the offshore waters of the SNS. Whilst the Plan does not specifically address decommissioning of oil and gas facilities, it does present the policy objectives which Regulators use as a framework to assess offshore developments and their potential impacts on the UK marine area.

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1.3 INTRODUCTION

The Minke Field is located in the Southern Basin of the UKCS in Block 44/24a and lies about 184 km from the Norfolk coastline and 15km south-west of the D15-FA platform, operated by Neptune Energy Netherlands BV, located in the Dutch sector. The field is produced via a single subsea horizontal well tied back by an approximately 15km 8" diameter production pipeline to a riser at the D15-FA platform.


The well and 3.7km of the pipelines are within the UK sector, the D15-FA platform and remaining 11.2km of the pipeline are located in the Dutch sector, block D15.

The Minke field Cessation of Production (CoP) was granted in 2016 by the Oil and Gas Authority (OGA).

Minke Main was developed through a single subsea satellite well (6Y) - complete with protection structure - and production was evacuated to the D15-FA host platform in the Dutch sector. Minke Main began production in June 2007.

The decommissioning programmes shall be submitted following public, stakeholder and regulatory consultation and in full compliance with OPRED guidelines. The decommissioning programmes explain the principles of the removal activities and are supported by an Environmental Appraisal (EA).

Please note that any information given in these decommissioning programmes relating to facilities in the Netherlands Continental Shelf are provided to allow an overall view of the Minke decommissioning project only. OPRED has no remit concerning these facilities.


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1.4 OVERVIEW OF INSTALLATIONS AND PIPELINES BEING DECOMMISSIONED

1.4.1 Installations

Table 1.1: Installation Being Decommissioned			
Field:	Minke	Production Type (Oil/Gas/Condensate)	Gas
Water Depth (m)	44	UKCS block	44/24a
Subsea Installation		Number of Wells	
Number	Type	Platform	Subsea
1	Wellhead Protection Structure (WHPS)	N/A	1
Drill Cuttings pile		Distance to median	Distance from nearest UK coastline
Number of Piles	Total Estimated Volume (m ³)	km	km
Nil	Nil	3.7	207


Table 1.2: Installation Section 29 Notice Holders Details		
Section 29 Notice Holders	Registration Number	Equity Interest (%)
Neptune E&P UKCS Ltd.	03386464	15.6%
Neptune Energy International	FR479920134	0%
INEOS UK SNS Limited	01021338	35.84%
INEOS UK E&P Holdings Limited	SC200459	0%
Premier Oil E&P UK Limited	02761032	42.67%
Premier Oil PLC	SC234781	0%
DNO North Sea (U.K.) Limited	04848017	5.89%
DNO North Sea PLC	04622251	0%

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1.4.2 Pipelines


Table 1.3: Pipelines Being Decommissioned		
Number of Pipelines / Umbilicals (UK)	2 (1 pipeline / 1 umbilical)	(See Table 2.2)
Number of Pipelines / Umbilicals (NL)	2 (1 pipeline / 1 umbilical)	(See Table 9.1, Appendix 1)

Table 1.4: Pipelines Section 29 Notice Holders Details		
Section 29 Notice Holders	Registration Number	Equity Interest (%)
Neptune E&P UKCS Ltd.	03386464	15.6%
Neptune Energy International	FR479920134	0%
INEOS UK SNS Limited	01021338	35.84%
INEOS UK E&P Holdings Limited	SC200459	0%
Premier Oil E&P UK Limited	02761032	42.67%
Premier Oil PLC	SC234781	0%
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1.5 SUMMARY OF PROPOSED DECOMMISSIONING PROGRAMMES

Table 1.5: Summary of Decommissioning Programmes		
Selected Option	Reason for Selection	Proposed Decommissioning Solution
3. Subsea Installation		
Full removal of wellhead protection structure from the seabed.	Meets OPRED regulatory requirements. Removes a potential obstruction to fishing operations and maximises recycling of materials.	Recovery of structure from the seabed using an appropriate vessel and lifting equipment. Structure is not piled. Diver support may be required. Structure to be recovered to shore for reuse or recycling.
4. Pipelines, Flowlines & Umbilicals		
Decommissioning of the Minke pipeline and umbilical <i>in situ</i> with minimal invention works.	Meets OPRED regulatory requirements as pipeline and umbilical are sufficiently trenched and buried.	The trenched and buried pipeline and umbilical will be left <i>in situ</i> and disconnected at the ends (where the pipeline and umbilical exits rock placement) and the ends removed. The surface laid pipeline/umbilical sections and associated stabilisation features under rock cover shall be removed to leave a clear seabed.
5. Wells		
Abandoned in accordance with Oil & Gas UK Guidelines for the Suspension and abandonment of Wells and Neptune standards.	Meets OGA and HSE regulatory requirements.	A PON5/ Portal Environmental Tracking System (PETS)/Marine Licence application under the relevant regulations will be submitted in support of works carried out.
6. Drill Cuttings		
This section is not applicable to Minke Field since Minke is a single well subsea development and the recent surveys indicate no evidence of a drill cuttings pile.		
7. Interdependencies		
Subsea structure removal can only occur after pipeline flushing and cleaning scope and the well plug and abandonment campaign. Selected pipeline decommissioning option will need to be communicated to Dutch regulator.		

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1.6 FIELD LOCATION INCLUDING FIELD LAYOUT AND ADJACENT FACILITIES

Figure 1.1: Field Location in UKCS



Figure 1.2: Field Layout

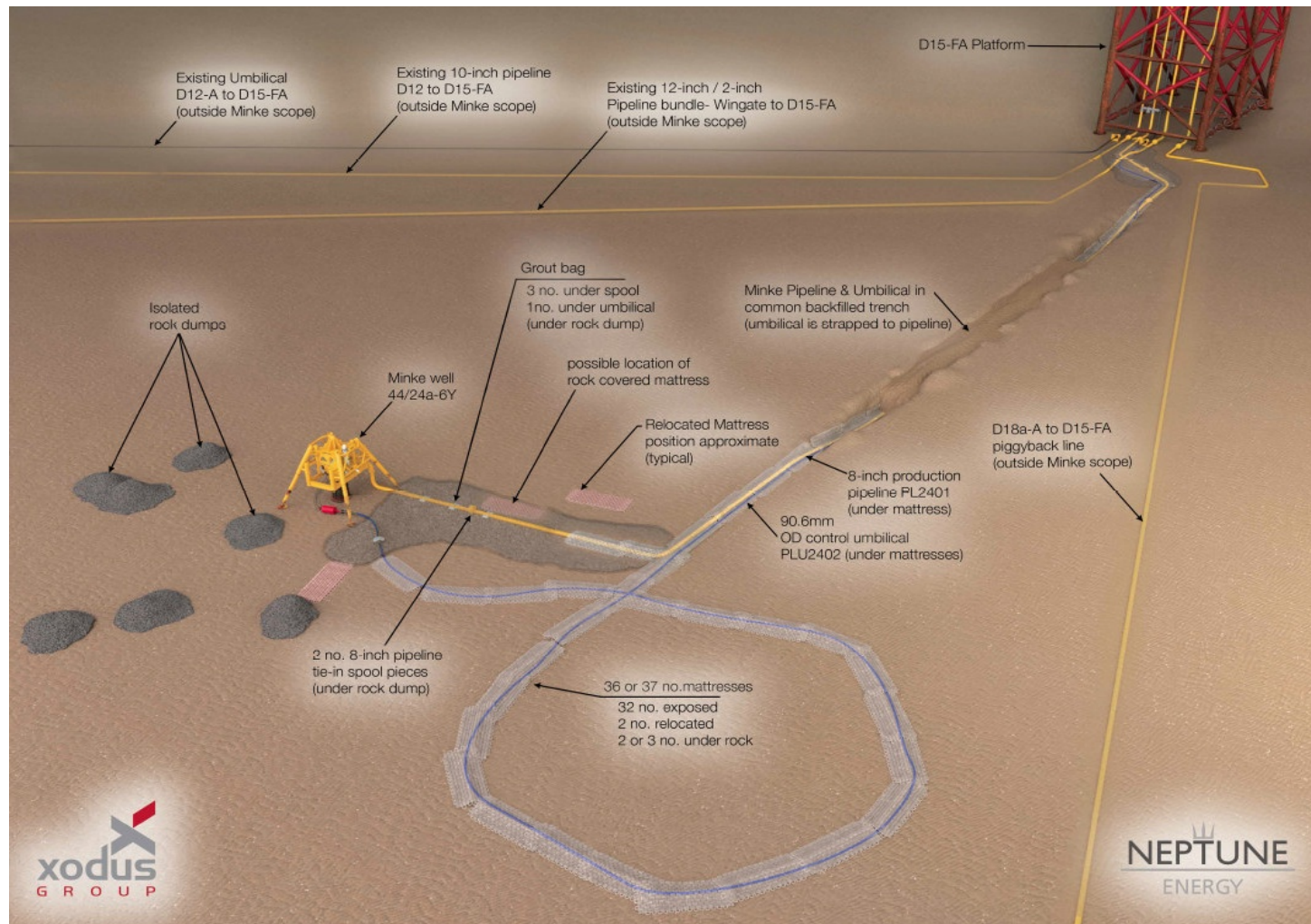


Table 1.6: Adjacent Facilities

Owner	Name	Type	Distance/Direction		Information	Status
Neptune Energy Netherlands BV	D15-FA	Platform	15km North East from Minke WHPS		Gas exported via the 36-inch diameter pipeline Noordgastransport Extension (NGT Extension) and Noordgastransport (NGT) pipelines. Exported gas goes to the Uithuizen Terminal in the NL.	Operational
			WGS84 Decimal	54.324914°N 2.934325°E		
			WGS84 Decimal Minute	54°19.494863'N 2°56.059471'E		
Wintershall Noordzee B.V.	Wingate	Platform	10.7km West-Northwest of Minke WHPS		Normally unattended installation which supports production from the Wingate field. Gas and condensate is transmitted to the D15-FA platform for processing.	Operational
			WGS84 Decimal	54.316574°N 2.619604°E		
			WGS84 Decimal Minute	54°18.994'N 2°37.176"E		
Wintershall Noordzee B.V.	Wingate	Pipeline bundle (12" Pipelines and 2" umbilical)	15km North East from Minke WHPS		Wingate pipeline bundle crosses once over the top of the Minke pipeline and umbilical at base of D15-FA platform.	Operational
			WGS84 Decimal	54.324680°N 2.933879°E		
			WGS84 Decimal Minute	54°19.480828'N 2°56.032740'E		

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Table 1.6: Adjacent Facilities

Owner	Name	Type	Distance/Direction		Information	Status
ConocoPhillips	Kelvin	Platform	19km West-Northwest from Minke WHPS		Normally Unattended Installation (NUI) tied into the ConocoPhillips operated Caister Murdoch System (CMS).	Non-Operational
			WGS84 Decimal	54.33291095°N 2.47931211°E		
			WGS84 Decimal Minute	54°19.9747'N 2°28.7587'E		
ConocoPhillips	Katy	Platform	18km North-Northwest from Minke WHPS		Normally Unattended Installation (NUI) tied into the ConocoPhillips operated Caister Murdoch System (CMS).	Non-Operational
			WGS84 Decimal	54.40303378°N 2.65920218°E		
			WGS84 Decimal Minute	54°24.1820'N 2°39.5521'E		
ConocoPhillips	Munro MH	Platform	35km West-Northwest from Minke WHPS		Normally Unattended Installation (NUI) tied into the ConocoPhillips operated Caister Murdoch System (CMS).	Non-Operational
			WGS84 Decimal	54.43387881°N 2.29869073°E		
			WGS84 Decimal Minute	54°26.0327'N 2°17.9214'E		

Table 1.6: Adjacent Facilities

Owner	Name	Type	Distance/Direction		Information	Status
ConocoPhillips	Caister	Platform	19.7km West-Southwest from Minke WHPS		Not-normally manned steel platform which supports the Caister development. Platform is tied back to the Murdoch manned production platform.	Non-Operational
			WGS84 Decimal	54.20306°N 2.449839°E		
			WGS84 Decimal Minute	54°12.184'N 2°26.990'E		
ConocoPhillips	Murdoch Accommodation	Platform	27.5km West-Southwest from Minke WHPS		Accommodation platform local to the Murdoch Compression and Drilling platforms.	Operational
			WGS84 Decimal	54.26711°N 2.320354°E		
			WGS84 Decimal Minute	54°16.026'N 2°19.221'E		
ConocoPhillips	Murdoch Compression	Platform	27.4km West-Southwest from Minke WHPS		Murdoch gas-compression platform connected to the Drilling platform via bridge link.	Non-Operational
			WGS84 Decimal	54.2675°N 2.321534°E		
			WGS84 Decimal Minute	54°16.050'N 2°19.292'E		

Table 1.6: Adjacent Facilities

Owner	Name	Type	Distance/Direction		Information	Status
ConocoPhillips	Murdoch Drilling	Platform	27.3km West-Southwest from Minke WHPS		Supports production from the Murdoch field and well as gathering production fluids from the nearby Caister facility. Gas from the Murdoch system is exported to the Theddlethorpe Gas Terminal.	Non-Operational
			WGS84 Decimal	54.26796°N 2.322324°E		
			WGS84 Decimal Minute	54°16.077'N 2°19.340'E		
ConocoPhillips	Boulton	Platform	38.4km West-Southwest from Minke WHPS		Normally Unattended Installation (NUI) with minimal processing facilities. Production is tied back to the nearby Caister Murdoch System (CMS).	Non-Operational
			WGS84 Decimal	54.243°N 2.15284°E		
			WGS84 Decimal Minute	54°14.580'N 2°9.171'E		
Faroe Petroleum	Ketch	Platform	27.9km South-Southwest from Minke WHPS		Normally Unattended Installation (NUI) which supports production from the Ketch field. Production fluids are exported to the Theddlethorpe Gas Terminal via the Murdoch platform.	Non-Operational
			WGS84 Decimal	54.04942°N 2.48835°E		
			WGS84 Decimal Minute	54°2.965'N 2°29.301'E		

Table 1.6: Adjacent Facilities

Owner	Name	Type	Distance/Direction		Information	Status
Perenco	Tyne	Platform	27.8km North-Northwest from Minke WHPS		Normally Unattended Installation (NUI) supporting production from the Tyne field. Wet gas Tyne is then exported via the Trent Platform Mobile Offshore Application Barge.	Non-Operational
			WGS84 Decimal	54.44857°N 2.479706°E		
			WGS84 Decimal Minute	54°26.914'N 2°28.782'E		
Spirit Energy	Chiswick	Platform	35km South-Southeast from Minke WHPS		Normally Unattended Installation (NUI) tied back to the Markham installation forms part of the Spirit Energy Greater Markham Area.	Operational
			WGS84 Decimal	53.93920582°N 2.74573653°E		
			WGS84 Decimal Minute	53°56.3523N 2°44.7442'E		

Impacts of Decommissioning Proposals

Minke facilities at the D15-FA approach are planned to be deferred until the D15-FA platform is decommissioned subject to agreement with the D15-FA owners to avoid disruption to ongoing production from the Wingate and D15-FA fields.


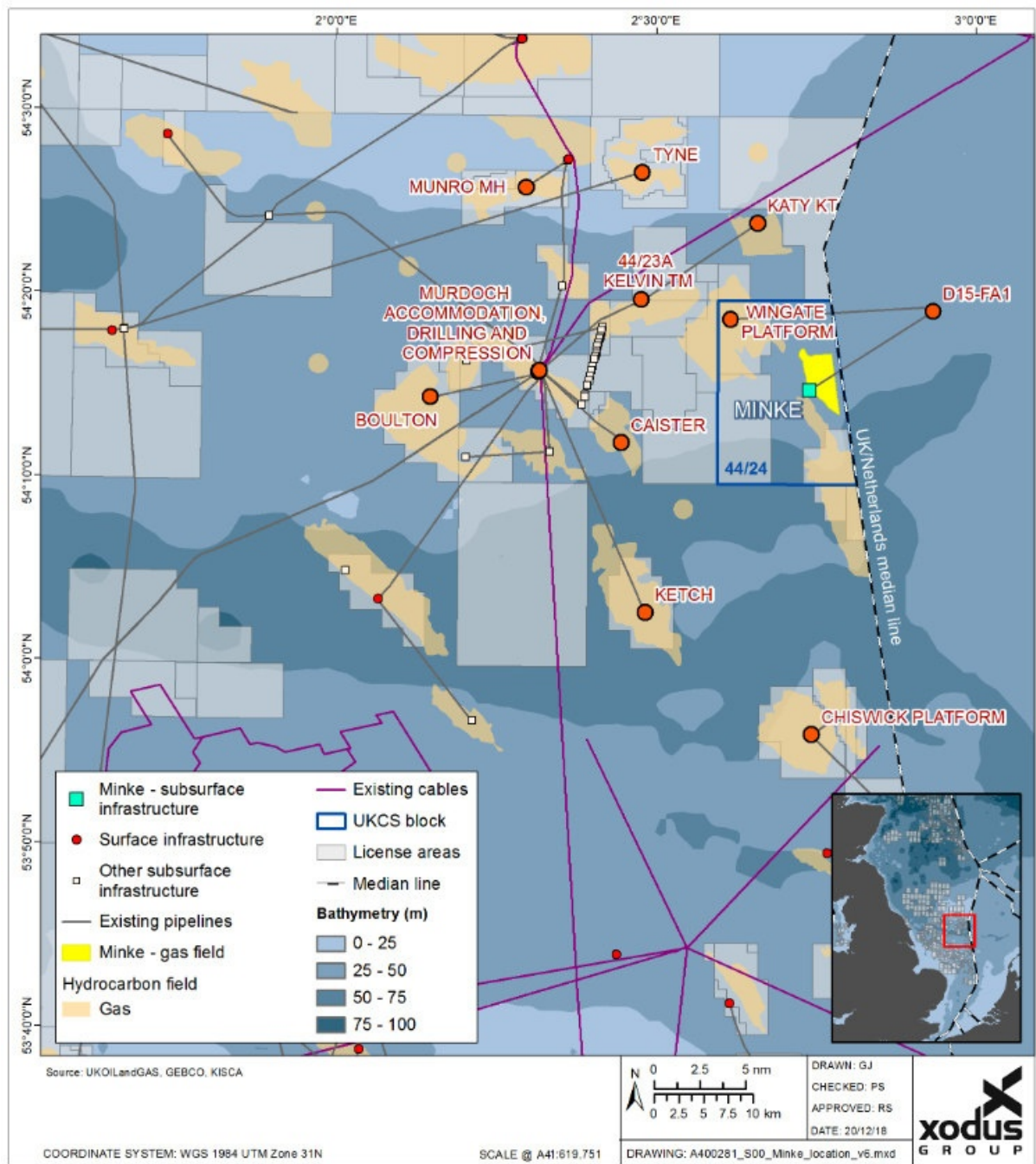

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Figure 1.3: Adjacent Facilities



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1.7 INDUSTRIAL IMPLICATIONS

Neptune plans to form collaborating partnerships with the supply chain based on the guiding principles outlined in the Neptune Supply Chain Charter. Principles that are key to this approach are summarised below.

Engagement


- Neptune will make available as much information as practicable to the market by way of Share fairs, industry conferences, FPAL, industry media articles, industry forums and RFIs.
- Neptune will define and publicise contact points for handling of supplier enquiries.
- Neptune will enter into early consultation with suppliers on draft strategies, pricing options, specifications, and statements of requirement where appropriate.
- Neptune will provide sufficient time and information for suppliers to respond to the bidding process appropriate for the work.

Trust

- Neptune will treat all parties openly, fairly, with respect and without bias.
- Neptune will protect commercially sensitive information and respect and protect each other's intellectual property.
- Neptune will define objectives and make it clear what expectations of suppliers and potential suppliers.
- Where appropriate, Neptune will collaborate with suppliers to agree common objectives, Key Performance Indicators and share in the success of meeting milestones.
- Neptune will not partake in market abuse or anti-competitive behaviour.
- Neptune will demonstrate the highest professional standards in the award and management of contracts.

Innovation


- Neptune are keen to explore new technologies and will invite suppliers to demonstrate any new technologies and innovations.
- Neptune are open to discussing new commercial models with suppliers.
- Neptune will select the most suitable suppliers for each project using KPI measures and performance reviews.
- Neptune is open to introducing new products and are enthusiastic for new potential partners to present their innovative technologies and products. Neptune recognise that there is no one size fits all approach to each contract and no set supplier for every product.
- Neptune's Supply Chain Department is not biased and will always make selections based on elements of the Neptune Supply Chain Charter in order to continuously enhance the supply chain.

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2 DESCRIPTION OF ITEMS TO BE DECOMMISSIONED

2.1 INSTALLATION: SUBSEA INCLUDING STABILISATION FEATURES

Table 2.1: Subsea Installation and Stabilisation Features					
Subsea installations including Stabilisation Features	Number	Size/Weight (Te)	Location		Comments/Status
Wellhead (comprises of Xmas Tree, WPS (see Row 2), Xmas Tree Debris Cap and Tree Cap)	1	17.1 tonnes Well 44/24a-6Y	WGS84 Decimal	54.252167°N 2.741778°E	13 5/8" SG-1 Wellhead CH4 and 13 5/8" Vetco Gray 5" x 2" Xmas Tree
			WGS84 Decimal Minute	54°15.130000'N 2°44.506667'E	
Wellhead Protection Structures	1	8 x 8 x 5m 1 x 26.75 tonnes	WGS84 Decimal	54.252167°N 2.741778°E	Structure is securely clamped to the associated wellhead conductor
			WGS84 Decimal Minute	54°15.130000'N 2°44.506667'E	

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2.2 PIPELINES INCLUDING STABILISATION FEATURES

Table 2.2: Pipeline/Flowline/Umbilical Information									
Description	Pipeline Number (as per PWA)	Diameter	Length (km)	Description of Component Parts	Product Conveyed	From – To End Points	Burial Status	Pipeline Status	Current Content
UK Pipelines									
XT Tie-in Spool (UK)	PL2401	8"	0.04	Rigid fabricated steel spool	Gas	XT 44-24a- 6Y - XT Spool Tie-In Flange	Enters trench from seabed; partially rockdumped	Operational	Hydro- carbon
Minke pipeline (UK)	PL2401	8"	3.7	Carbon steel	Gas	XT Spool Tie-in Flange - UKCS/NLCS boundary	Trenched and buried except 75m from Trench End to Tie in Spool to Minke wellhead Average DOC over length of pipeline bundle generally exceeds the minimum requirements of 0.6 m above top of pipeline as per BEIS guidelines for in-situ decommissioning except at approach to Minke subsea completion	Operational	Hydro- carbon


Table 2.2: Pipeline/Flowline/Umbilical Information

Description	Pipeline Number (as per PWA)	Diameter	Length (km)	Description of Component Parts	Product Conveyed	From – To End Points	Burial Status	Pipeline Status	Current Content
							Average DOC identified as 1.5m in 2017 survey Trending has shown DOC to increase over time		
EHC Control Umbilical (UK)	PLU2402	90.6mm OD	3.9	Umbilical (carbon steel/ copper/ thermoplastic)	Chemicals	UKCS/NLCS boundary – XT 44-24a-6Y	Umbilical is strapped to PL2401 and trenched and buried (except 175m at Tree End of which 10m is buried under rockdump) The DOC along the length of the umbilical within the pipeline trench >0.6 m except at D15-FA platform approach	Operational	Chemicals

Table 2.3: Subsea Pipeline Stabilisation Features

Stabilisation Feature	Total Number	Weight (Te)	Location(s)	Exposed/Buried/Condition
Concrete mattresses (UK)	36 or 37	6 x 3 x 0.15m 201 tonnes	Over pipeline PL2401 and umbilical PLU2402 at Minke well approach	34 exposed (including 2 relocated) and 2 or 3 buried Refer to Figure 1.2 for details
Grout bags (UK)	8	8 tonnes	4 locations on approach to Minke wellhead (3off pipeline and 1off umbilical); each location has 2 large grout bags and 29 small grout bags	Large grout bags (1 tonne each – buried under rock placement)
Grout bags (UK)	116	2.3 tonnes		Small grout bags (20kg each –buried under rock placement)
Rock Placement	N/A	6000 ^{Note 1}	2 locations: Spot rock placement on pipeline PL2401 and umbilical PLU2402 at various locations	Rock is >0.6m over top of pipe
		500 ^{Note 1}	Minke Wellhead approach	

Note 1 – Total installed rock is estimated based on the consent provided for 500Te of rock in 2012 and for 6000 Te contingency rock placement along PL2401 in 2007

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2.3 WELLS

Table 2.4: Well Information			
Subsea Wells	Designation	Status	Category of Well
44/24a-6Y	Gas Production	Shut-in	Note 2
E&A Well 44/24-4	Exploration and Appraisal (E&A)	Abandoned	2.1
E&A Well 22/24-5	E&A	Abandoned	2.1

Note 2 – This shall be confirmed upon completion of well decommissioning engineering (which is still ongoing at the time of writing these DPs)

2.4 INVENTORY ESTIMATES

The approximate amount of key materials used in the make-up of the Minke field infrastructure has been evaluated. Further review of the inventories of materials will be conducted during the detailed engineering phase of decommissioning, summary plots of the estimated material inventories are shown in Figure 2.1 and Figure 2.2. An inventory will be shared with the Environment Agency (EA).

The Environmental Appraisal Report will contain further information on the inventory.


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Figure 2.1: Pie Chart of Estimated Inventories (Installation)

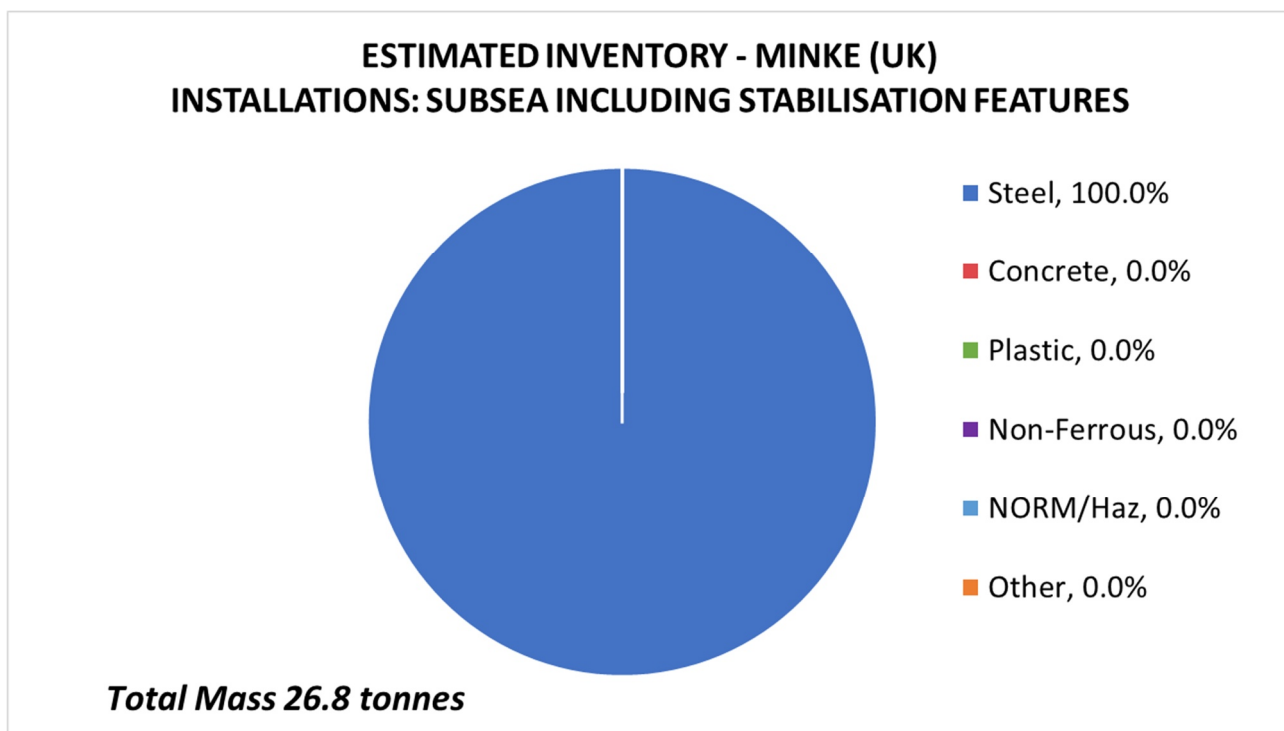
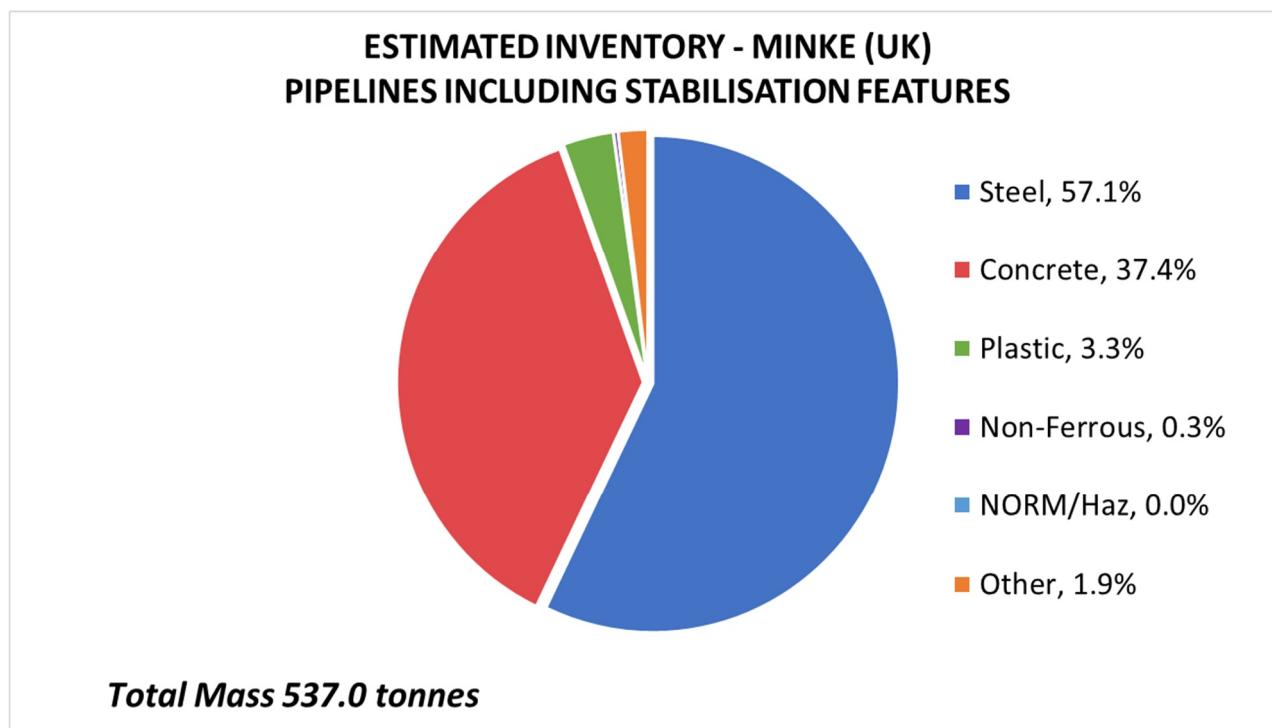



Figure 2.2: Pie Chart of Estimated Inventory (Pipelines)



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3 REMOVAL AND DISPOSAL METHODS

Neptune has a Waste Management Plan which details how the waste generated from the Minke offshore asset during the decommissioning process will be managed in order to comply with environmental legislation and observe the advice outlined in the OPRED Guidance Notes.

The vast majority of the waste being brought ashore will be recyclable providing the infrastructure is appropriately cleaned to remove any residual contaminants e.g. hydrocarbon residues, biological material, etc. Neptune will aspire to recycle 100% of the materials recovered from the Minke decommissioning activities however it is recognised that this is subject to a range of factors (e.g. contamination of materials). Neptune shall take all reasonable courses of action to prevent waste being sent to landfill and ensure the most environmentally sound route is taken.

3.1 SUBSEA INSTALLATION AND STABILISATION FEATURES

Table 3.1: Subsea Installation and Stabilisation Features			
Subsea installations and stabilisation features	Number	Option	Disposal Route (if applicable)
Wellhead Protection Structure	1	Full Removal	Return to shore for reuse or recycling as part of well plug and abandonment campaign
Concrete mattresses	N/A	N/A	N/A
Grout bags	N/A	N/A	N/A
Rock Placement	N/A	N/A	N/A

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3.2 PIPELINES


Decommissioning Options:

Table 3.2: Pipeline or Pipeline Groups Decommissioning Options			
Pipeline or Group (as per PWA)	Condition of line/group	Whole or part of pipeline/group	Decommissioning Options considered
XT Tie-in Spool (UK) (PL2401)	Surface laid and partially rockdumped; enters trench from seabed	Surface laid spoolpiece will be recovered from the seabed and transported to shore for reuse or recycling	Full removal
Minke pipeline (UK) (PL2401)	Trenched and buried except 75 m from Trench End to Tie in Spool to Minke wellhead	Pipeline and umbilical will be decommissioned <i>in situ</i> with some minor intervention activities to cut and rock placement the ends.	Decommission <i>in situ</i> with minimal intervention works
EHC Control Umbilical (UK) (PLU2402)	Umbilical is strapped to PL2401 and trenched and buried except 175m at Tree End		Full removal via deburial and reverse reel of pipeline bundle
			Full removal via deburial and cut and lift pipeline bundle

Comparative Assessment Method:

The CA utilises a Multi Criteria Decision Analysis (MCDA) tool which employs pairwise comparisons of quantitative and qualitative data. The options are assessed against the five main criteria defined in the BEIS decommissioning Guidance Notes (Safety; Environment; Technical; Societal; and Economics) which were equally weighted. These criteria were then subdivided into relevant sub-criteria for the assessment, which are detailed, along with the overall CA process, in the Minke Comparative Assessment Report [4].


The Minke CA evaluation considered the pipeline and stabilisation materials; noting that these groups of infrastructure were intrinsically linked i.e. if the pipeline was fully removed then the associated mattresses and grout bags would also be removed. The other infrastructure groups will be fully removed and therefore were excluded from the CA evaluation.

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Outcome of Comparative Assessment:

Table 3.3: Outcomes of Comparative Assessment		
Pipeline or Group	Recommended Option	Justification
XT Tie-in Spool (UK) (PL2401)	Full removal	Part of spoolpiece is under rockdump. However, it was decided during the CA process since the buried section was relatively short in length, it would be technically feasible to remove the structure in line with OPRED guidelines which aim to achieve a clear seabed.
Minke pipeline (UK) (PL2401)	Decommission <i>in situ</i> with minimal intervention works	Recent pipeline surveys (2017) have documented the status of the pipeline and umbilical and concluded that the depth of burial is sufficient to avoid a significant risk to other users of the sea. Minor intervention works will be executed to cut the pipeline ends and place rock at the ends. This work also includes removal of the surface laid umbilical. Future inspection surveys will be carried out however it is not expected that the pipeline and umbilical burial status will change over time. The existing ends on the seabed section and transition are covered in rock. If the ends were to be buried, the rock would need to be displaced and excavation under the cut pipeline required to lower it. The proposed way forward was to rock dump the cut ends. This results in approximately 100 tonnes of additional rock on the seabed for the UK end only.
EHC Control Umbilical (UK) (PLU2402)		


More details of the selected decommissioning option, including an illustration of the 'as left' condition of the infrastructure, are given in Section 3.4.

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3.3 PIPELINE STABILISATION FEATURES

Table 3.4: Pipeline Stabilisation Features			
Stabilisation features	Number	Option	Disposal Route (if applicable)
Concrete mattresses	33 or 34	The 33 or 34 exposed mattresses will be removed from the seabed.	Mattresses destined for 'full removal' will be recovered from the seabed using a suitable vessel and lifting equipment. Diver assistance may be required. Mattresses will be recovered to shore for reuse or recycling.
Concrete mattresses	3	The mattresses buried under rock dump shall be left <i>in situ</i>	N/A
Grout bags	116x small (~20kg)	Where exposed, the large and small grout bags will be removed from the seabed. It is assumed all grout bags shall become accessible for this DP.	Grout bags destined for 'full removal' will be recovered from the seabed using a suitable vessel and lifting equipment. Diver assistance may be required. Grout bags will be recovered to shore for reuse or recycling.
	8x large (~1Te)		
Rock Placement (Te)	6500 Te	Decommission <i>in situ</i>	N/A

More details of the selected decommissioning option, including an illustration of the 'as left' condition of the infrastructure, are given in Section 3.4.

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3.4 COMPARATIVE ASSESSMENT OUTCOME – SELECTED OPTION OVERVIEW

A comparison between the existing Minke infrastructure and the 'as left' condition based on the proposed decommissioning option is given in the Figure 3.1. As the figures show:

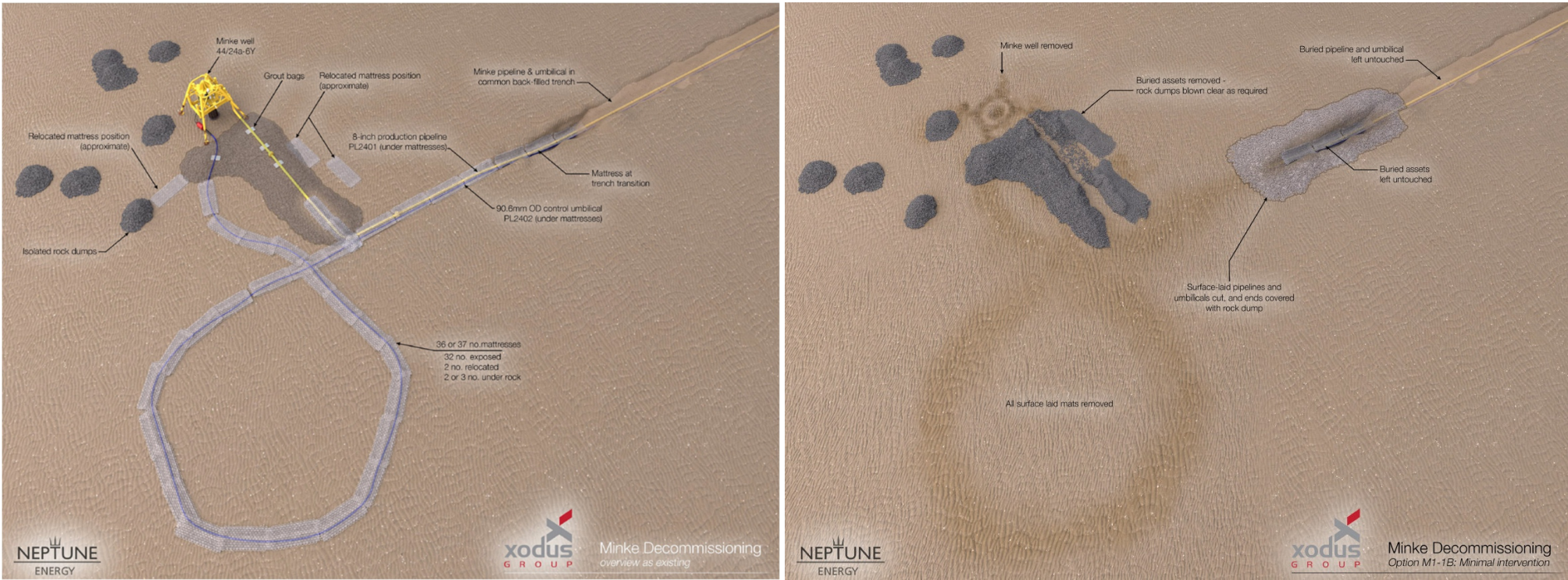
- The Minke WHPS and XT Tie-in Spool will be recovered to shore;
- The Minke pipeline and umbilical will be decommissioned *in situ* with some minor intervention works to remove surface laid section leaving a clear seabed; and
- All grout bags and the majority of the concrete mattresses will be removed leaving 3 mattress *in situ* (buried under rock placement).


The key safety, environmental and societal implications of the selected option are summarised in the following table and extracted from the Minke Comparative Assessment Report [4].

Table 3.5: Summary of Key Safety, Environmental and Societal Implications of Decommissioning Option	
Parameter	Value
Life Cycle Emissions (Materials Only)	2,355 Te
Vessel Days (Total)	37
Overall PLL	1.4 e ⁻³
Seabed Disturbance	2.3 km ²
Risk to Fishermen	Low
Vessel CO ₂ Emissions	852 Te

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Figure 3.1: Comparison of Existing Minke Infrastructure (Left) and 'As Left' Condition (Right)



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3.5 WELLS

Table 3.6: Well Plug and Abandonment
<p>The wells which remain to be abandoned, as listed in Section 2.3 (Table 2.4) will be plugged and abandoned in accordance with Oil and Gas UK Guidelines for the suspension and abandonment of wells and Neptune standards.</p> <p>A PON5/Portal Environmental Tracking System (PETS)/Marine Licence application will be submitted in support of any such work that is to be carried out.</p>

3.6 DRILL CUTTINGS

This section is not applicable to Minke Field since Minke is a single well subsea development and the recent surveys indicate no evidence of a drill cuttings pile.

3.7 WASTE STREAMS

Table 3.7: Waste Stream Management Methods	
Waste Stream	Removal and Disposal method
Bulk liquids	Flushed from subsea well to the D15 platform where liquids shall be processed via existing platform systems. Some liquids may be discharged to sea via the applicable chemical permits.
Marine growth	Removed offshore where possible. Any marine growth brought to shore will be disposed of according to guidelines.
NORM/LSA Scale	NORM may be present during decommissioning. It shall be partially removed offshore under appropriate permit and disposed of in line with guidelines.
Asbestos	No asbestos is expected during decommissioning. If present, it will be recovered to shore and taken onshore for disposal. Any recovered asbestos will be contained in an appropriate manner and handled by qualified personnel with the necessary safety equipment.
Other hazardous wastes	Will be recovered to shore and disposed of under appropriate permit.
Onshore Dismantling sites	Appropriate licenced sites will be selected. Facility chosen must demonstrate proven disposal track record and waste stream management throughout the deconstruction process and demonstrate their ability to deliver innovative recycling options.



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Table 3.8: Inventory Disposition			
	Total Inventory Tonnage	Planned tonnage to shore	Planned left <i>in situ</i>
Installations	27	27	0
Pipelines	326	3	323
Pipeline Stabilisation Features	211	194.7	16.3 ^{Note 3}
Total	564	224.7	339.3

As outlined in Table 3.8, circa 225 tonnes of material are expected to be returned to shore. Provided that the appropriate handling and cleaning procedures are observed, the majority of the material is suitable for recycling. In line with the guiding principles of the project Waste Management Plan, Neptune aspire to recycle 100% of the recovered materials however it is recognised that this is subject to a range of factors (e.g. contamination of materials).

Note 3 – This assumes that when the umbilical and spool piece are removed the grout bags become accessible and shall be removed. The tonnage shown assumes 3 buried mattresses are to be left *in situ*.

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4 ENVIRONMENTAL APPRAISAL

4.1 ENVIRONMENTAL SENSITIVITIES (SUMMARY)

Table 4.1 describes the important/sensitive features of the receiving environment in the area in which the decommissioning activities will take place. Details are available in the supporting document, the Minke Decommissioning Environmental Appraisal [5].

Table 4.1: Environmental Sensitivities	
Environmental Receptor	Main Features
Conservation interests	The Minke development is located 6.1 km NNW of the Dogger Bank SAC, the largest sandbank in UK waters. The sandbanks characteristic of this site are always at least slightly covered by seawater and support soft corals. There is one further SAC located 15.2 km NNW from the Minke development: the Southern North Sea SAC. There is one MCZs located 28.8 km SSE from the Minke infrastructure: Markham's Triangle Recommended MCZ (rMCZ). There are no SPAs located < 50km from the Minke infrastructure.
Seabed	Seabed sediments around the Minke infrastructure are comprised of loose to fine silty sand with occasional shell fragments. The seabed surrounding the project area has a EUNIS classification of A5.27 (offshore circalittoral sand), which remains poorly understood but is considered more stable than circalittoral sands found in shallow waters. No Annex I habitats have been identified in the project area. Benthic fauna identified during seabed surveys were confirmed to be characteristic of this region of the SNS.
Fish	Following species have spawning grounds in the vicinity of the project (peak spawning months in brackets): Cod, (February – March), Whiting (February – June), Plaice (January – February), Sole (April), and Sandeel (November – February). The following species have high intensity nursery grounds in the vicinity of the project: Tope shark & Whiting. The following species have low intensity nursery grounds near the project: Anglerfish, Blue whiting, Herring, Ling, Mackerel, Sandeel, Sprat, Cod, Spurdog, Horse mackerel and European hake.
Fisheries	Fishing effort in the vicinity of the Minke development is slightly low (ICES Rectangle 37F2) compared to the rest of the UKCS. Commercial fish landings from this ICES Rectangle are comprised almost wholly of demersal and shellfish species, whereas commercial fishing for pelagic species takes up a very small portion of the caught live weight. The demersal fisheries target plaice, turbot, lemon sole, brill, and gurnards and latchets, while the shellfish fishery activity in the area consists primarily of trawling for <i>nephrops</i> .


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Table 4.1: Environmental Sensitivities													
Environmental Receptor	Main Features												
Marine Mammals	Four species of marine mammal have been identified within the vicinity of the Minke infrastructure: Harbour porpoise ('low/medium' activity most of the year, peaking to 'high' in Jun/Jul), White-beaked dolphin (no regular activity most of the year but peaks to 'medium' in Jan), White-Sided dolphin (no regular activity most of the year but peaks to 'low' in Aug) and Minke Whale (no regular activity most of the year but peaks to 'medium' in Aug).												
	Month	J	F	M	A	M	J	J	A	S	O	N	D
	Harbour porpoise		M	M			H	H	M	M	L		
	White-beaked dolphin	M											
	White-sides dolphin								L				
	Minke whale								M				
Birds	The most common species of seabird found in this region of the SNS include: Fulmar, Gannet, Guillemot, Kittiwake, Razorbill, Puffin, Little Auk; as well as numerous species of gull, and tern.												
	Month	J	F	M	A	M	J	J	A	S	O	N	D
	Seabird vulnerability	3	5	5	5	5	5	1	5	5	5	3	3
Onshore Communities	All onshore yards at which decommissioned material will be handled already deal with potential environmental issues as part of their existing site management plans. There is anticipated to be no change in impact as a result of any of the material proposed for recovery. Whilst the yard(s) is yet to be selected, this will be in the UK. They will be selected on the basis that they can demonstrate the ability to handle the materials landed.												
Other Users of the Sea	Recreational vessel activity potential across the Minke field is 'low-moderate' and consists of motor boat and boat angling activity. Several offshore platforms are within the vicinity of the Minke field, the closest of these include: Wingate (10.7 km WNW), D15-FA (Dutch; 14.9 km ENE), Katy (17.7 km NNW), Kelvin (19.3 WNW), Chiswick (34.7 km SSE), Munro MH (35.2 km WNW), Murdoch Accommodation (27.5 km WSW), Murdoch Compression (27.4 km WSW), Murdoch Drilling (27.3 km WSW), Caister (19.7 km WSW), Tyne (27.8 km NNW), Ketch (27.9 km SSW) and Boulton (38.4 km WSW) platforms. The Tampnet cable passes 19.5 km N of the Minke infrastructure. The Minke infrastructure lies approximately 70 km NE of the Humber 5 aggregate license area and 63 km NE of Humber 4 & 7 active aggregate dredging areas. The Hornsea Project 3 windfarm is located 28.5 km SW of the project area.												


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Table 4.1: Environmental Sensitivities	
Environmental Receptor	Main Features
Atmosphere	A review of previous decommissioning ES shows that atmospheric emissions are generally concluded to have no significant impact, and are usually extremely small in the context of UKCS/global emissions, especially when considering subsea tieback decommissioning scopes. The majority of emissions relate to the vessel time or the hypothetical remanufacture of material decommissioned in situ. As the decommissioning activities proposed are of such short duration this aspect is not anticipated to result in significant impact.

4.2 POTENTIAL ENVIRONMENTAL IMPACTS AND THEIR MANAGEMENT

Environmental Appraisal Summary:

Although there is expected to be some environmental impact as a result of the Minke asset decommissioning activities, the long terms effects will be minimised through appropriate planning, impact mitigation and environmental management (see Table 4.2). The project environmental impact assessment considered the effects of the decommissioning works in terms of the Minke operations in isolation as well as the potential cumulative and transboundary implications.

Table 4.2: Environmental Impact Management			
Activity	Main Impacts	Management	Residual Environmental Risk (post-mitigation)
Subsea Installation Removal	Seabed disturbance from decommissioning activities	All activities which may lead to seabed disturbance will be planned, managed and implemented in such a way that disturbance is minimised. A debris survey will be undertaken at the completion of the decommissioning activities. Any debris identified as resulting from oil and gas activities will be recovered from the seabed where possible. The area that requires an overtrawl assessment will be optimised through discussion with the relevant fishing organisations and regulators.	Negligible


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Table 4.2: Environmental Impact Management			
Activity	Main Impacts	Management	Residual Environmental Risk (post-mitigation)
	Discharges to sea	The decommissioning of offshore developments has the potential to introduce raw materials, such as hydrocarbons, plastics or metals, into the marine environment. Management measures to prevent hydrocarbon spills are in place, along with control and mitigation measures in the unlikely event of an accidental spill, as covered in the OPEP and by Neptune's marine procedures.	Negligible
Decommissioning Pipelines and Stabilisation Features	Seabed disturbance from decommissioning activities	All activities which may lead to seabed disturbance will be planned, managed and implemented in such a way that disturbance is minimised. A debris survey will be undertaken at the completion of the decommissioning activities. Any debris identified as resulting from oil and gas activities will be recovered from the seabed where possible. The area that requires an overtrawl assessment will be optimised through discussion with the relevant fishing organisations and regulators.	Negligible
	Residual risk of materials decommissioned in situ	All activities which may lead to seabed disturbance will be planned, managed and implemented in such a way that disturbance is minimised. A debris survey will be undertaken at the completion of the decommissioning activities. Any debris identified as resulting from oil and gas activities will be recovered from the seabed where possible. The area that requires an overtrawl assessment will be optimised through discussion with the relevant fishing organisations and regulators.	Negligible



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5 INTERESTED PARTY CONSULTATIONS

Pre-Engagement Summary


As part of the Minke Decommissioning Project, Neptune began pre-engagement with the key regulatory and statutory stakeholders in 2016. During this time, Neptune held meetings with regulators (OPRED, OGA) to keep them informed of the project progress, findings and proposed recommendations.

Neptune hosted a Comparative Assessment workshop on Thursday 20th September 2018 where representatives from BEIS, OPRED and OPRED's Offshore Decommissioning Unit (ODU) were in attendance. Representatives from the National Federation of Fishermen's Organisations (NFFO) were invited but unfortunately were unable to attend. A copy of the Comparative Assessment Report was issued on 25th September 2018 to the NFFO for review and they had no further comments.

Consultations Summary

Following Public Consultation during April 2019, no specific comments with respect to the decommissioning of the subsea installation or pipelines have been received.

Table 5.1: Summary of Stakeholder Comments		
Who	Comment	Response
Statutory Consultations		
Joint Nature Conversation Committee (JNCC)	The Joint Nature Conservation Committee (JNCC) notified Neptune of the change in the Southern North Sea conservation area status from Candidate SAC to SAC.	Table 4.1 of these DPs has been updated to reflect this change in designation, as well as the supporting documentation.

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6 PROGRAMME MANAGEMENT

6.1 PROJECT MANAGEMENT AND VERIFICATION

A Project Management team will be appointed to manage suitable sub-contractors for the removal of the installation. Standard procedures for operational control and hazard identification and management will be used. Where possible the work will be coordinated with other decommissioning operations in the SNS. The Management team will monitor and track the process of consents and the consultations required as part of this process. Any changes in detail to the offshore removal programme will be discussed and agreed with OPRED.

6.2 POST-DECOMMISSIONING DEBRIS CLEARANCE AND VERIFICATION

A post decommissioning site survey will be carried out around 500m radius of installation sites and 100m corridor along each existing pipeline route (50 m either side). Any seabed debris related to the Minke field oil and gas activities will be recovered for onshore disposal, where safe to do so, or recycling in line with existing disposal methods. Independent verification of seabed state will be obtained by trawling the installation sites and pipeline corridors. This will be followed by a statement of clearance to all relevant governmental departments and non- governmental organisations.

6.3 SCHEDULE

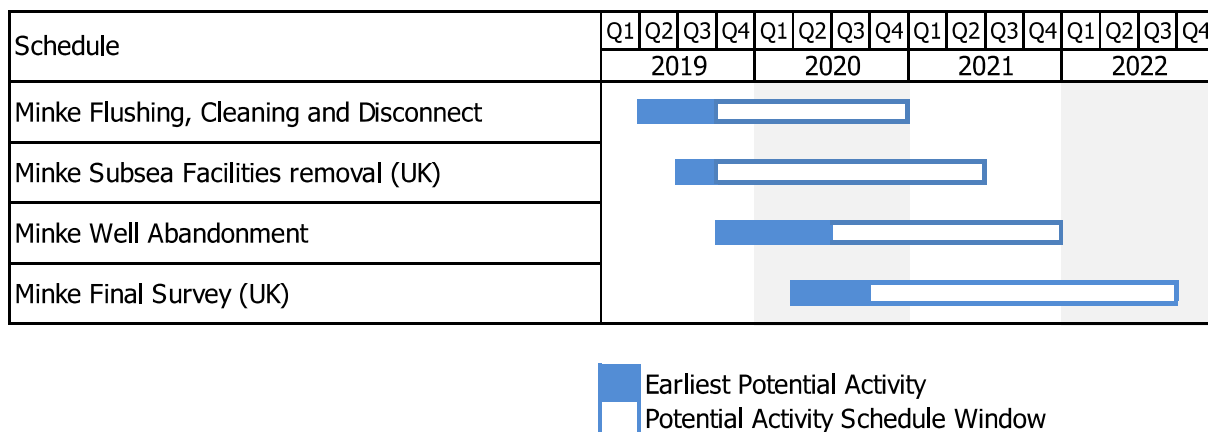



Figure 6.1: Gantt Chart of Project Plan

	Doc no.	MF00-09-AN-72-00004	Revision	C07
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	Minke Field Decommissioning Programmes			

6.4 COSTS

Table 6.1: Provisional Decommissioning Programmes costs	
Item	Estimated Cost (£m)
Pipelines Decommissioning	Provided to OPRED in confidence
Subsea Installation and Stabilisation Features	
Well Abandonment	
Continuing Liability – Future Pipeline and Environmental Survey Requirements	
TOTAL	


6.5 CLOSE OUT

Within 12 months of the completion of the Minke decommissioning scope, a close out report will be submitted to OPRED and posted on the Neptune Energy website explaining any significant variations from the Decommissioning Programme, in accordance with the OPRED requirements at that time. This shall include debris removal and independent verification of seabed clearance and the first post-decommissioning environmental survey.

6.6 POST-DECOMMISSIONING MONITORING AND EVALUATION


Neptune Energy will discuss and agree the post-decommissioning monitoring schedule with OPRED as part of this decommissioning programme. Based on the types of infrastructure involved and the proposed decommissioning strategy, Neptune Energy propose to conduct two further pipeline surveys post- decommissioning. The timing of these surveys will be discussed and agreed with OPRED and determined using a risk- based approach, with survey results informing the future frequency and extent of further surveys.

Neptune Energy will carry out a post-decommissioning environmental survey after completion of the decommissioning activities. The outcomes of the survey, and the need for any further surveys, will be discussed and agreed with OPRED.

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	Minke Field Decommissioning Programmes			

7 SUPPORTING DOCUMENTS

Table 7.1: Supporting Documents	
Document Number	Title
1	Oil & Gas UK Guidelines for Comparative Assessment in Decommissioning Programmes, Issue 1, Final Draft, June 2015
2	Guidelines for the abandonment of Wells, Issue 5, Oil and Gas UK, July 2015
3	OPRED Guidance Notes, Decommissioning of Offshore Oil and Gas Installations and Pipelines, May 2018
4	Minke Comparative Assessment Report, Document No.: MF00-09-AA-72-00001
5	Minke Decommissioning Environmental Assessment, Document No.: MF00-09-EB-72-00001

	Doc no.	MF00-09-AN-72-00004	Revision	C07
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	Minke Field Decommissioning Programmes			

8 LETTERS OF SUPPORT



Attention: Tracey Mackie

Decommissioning Manager

Offshore Petroleum Regulator for Environment and Decommissioning

Department for Business, Energy and Industrial Strategy

3rd Floor, AB1 Building (Wing C) Crimon Place

Aberdeen, AB10 1BJ

Dear Ms Mackie,

PETROLEUM ACT 1998

MINKE OFFSHORE INSTALLATIONS SECTION 29 NOTICE DATED 26 OCTOBER 2016

MINKE SUBMARINE PIPELINES SECTION 29 NOTICE DATED 26 OCTOBER 2016

Neptune Energy International (Company Number FR479920134) confirms support of the proposals detailed in the Neptune E&P UKCS Limited Minke Decommissioning Programmes (the "Decommissioning Programmes").

We also authorise Neptune E&P UKCS Limited to submit on our behalf the Decommissioning Programmes to the Secretary of State for approval under Section 29 of the Petroleum Act 1998.

Yours Sincerely,

James Lynn House

Chief Executive Officer

CC: David Hunt, Neptune Energy E&P UK Limited

NEPTUNE ENERGY INTERNATIONAL
9-11 Allee DE L'ARCHE TOUR EGEE
92400 Courbevoie

Offshore Petroleum Regulator for Environment & Decommissioning
Department for Business, Energy and Industrial Strategy (BEIS)
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

16 July 2019

Dear Kim,

**PETROLEUM ACT 1998
DECOMMISSIONING OF THE MINKE PIPELINES**

We acknowledge receipt of your letter dated 18th June 2019.

We, INEOS UK E&P Holdings Limited (company number SC200459), a company incorporated in Scotland having its registered office at Brodies House, 31-33 Union Grove, Aberdeen, Scotland, AB10 6SD, as a holder of a section 29 notice relative to the Minke field and in accordance with the Guidance Notes¹ confirm that we hereby authorise Neptune E&P UKCS Limited (company number 03386464), a company incorporated in England and Wales having its registered office at 11 Bressenden Place, London, England SW1E 5BY, to submit on our behalf abandonment programmes relating to the Minke Pipelines as directed by the Secretary of State on 18th June 2019.

We confirm that we support the proposals detailed in the Minke Decommissioning Programmes dated 16th July 2019, which is to be submitted by Neptune E&P UKCS Limited in so far as they relate to those pipelines in respect of which we are required to submit abandonment programmes under section 29 of the Petroleum Act 1998.

Yours sincerely



Noel Hagan
Mature Assets Manager

For and on behalf of INEOS UK E&P Holdings Limited (company number SC200459)

¹ Guidance Notes issued by the Department of Energy and Climate Change on Decommissioning of Offshore Oil and Gas Installations and Pipelines under the Petroleum Act 1998

Offshore Petroleum Regulator for Environment & Decommissioning
Department for Business, Energy and Industrial Strategy (BEIS)
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

16 July 2019

Dear Kim,

**PETROLEUM ACT 1998
DECOMMISSIONING OF THE MINKE FACILITIES**

We acknowledge receipt of your letter dated 18th June 2019.

We, INEOS UK E&P Holdings Limited (company number SC200459), a company incorporated in Scotland having its registered office at Brodies House, 31-33 Union Grove, Aberdeen, Scotland, AB10 6SD, as a holder of a section 29 notice relative to the Minke field and in accordance with the Guidance Notes¹ confirm that we hereby authorise Neptune E&P UKCS Limited (company number 03386464), a company incorporated in England and Wales having its registered office at 11 Bressenden Place, London, England SW1E 5BY, to submit on our behalf abandonment programmes relating to the Minke Facilities as directed by the Secretary of State on 18th June 2019.

We confirm that we support the proposals detailed in the Minke Decommissioning Programmes dated 16th July 2019, which is to be submitted by Neptune E&P UKCS Limited in so far as they relate to those facilities in respect of which we are required to submit abandonment programmes under section 29 of the Petroleum Act 1998.

Yours sincerely



Noel Hagan
Mature Assets Manager

For and on behalf of INEOS UK E&P Holdings Limited (company number SC200459)

¹ Guidance Notes issued by the Department of Energy and Climate Change on Decommissioning of Offshore Oil and Gas Installations and Pipelines under the Petroleum Act 1998

Offshore Petroleum Regulator for Environment & Decommissioning
Department for Business, Energy and Industrial Strategy (BEIS)
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

16 July 2019

Dear Kim,

**PETROLEUM ACT 1998
DECOMMISSIONING OF THE MINKE PIPELINES**

We acknowledge receipt of your letter dated 18th June 2019.

We, INEOS UK SNS Limited (company number 1021338), a company incorporated in England & Wales having its registered office at 15-19 Britten Street, London, SW3 3TY, as a holder of a section 29 notice relative to the Minke field and in accordance with the Guidance Notes¹ confirm that we hereby authorise Neptune E&P UKCS Limited (company number 03386464), a company incorporated in England and Wales having its registered office at 11 Bressenden Place, London, England SW1E 5BY, to submit on our behalf abandonment programmes relating to the Minke Pipelines as directed by the Secretary of State on 18th June 2019.

We confirm that we support the proposals detailed in the Minke Decommissioning Programmes dated 16th July 2019, which is to be submitted by Neptune E&P UKCS Limited in so far as they relate to those pipelines in respect of which we are required to submit abandonment programmes under section 29 of the Petroleum Act 1998.

Yours sincerely



Noel Hagan
Mature Assets Manager

For and on behalf of INEOS UK SNS Limited (company number 1021338)

¹ Guidance Notes issued by the Department of Energy and Climate Change on Decommissioning of Offshore Oil and Gas Installations and Pipelines under the Petroleum Act 1998

Offshore Petroleum Regulator for Environment & Decommissioning
Department for Business, Energy and Industrial Strategy (BEIS)
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

16 July 2019

Dear Kim,

**PETROLEUM ACT 1998
DECOMMISSIONING OF THE MINKE FACILITIES**

We acknowledge receipt of your letter dated 18th June 2019.

We, INEOS UK SNS Limited (company number 1021338), a company incorporated in England & Wales having its registered office at 15-19 Britten Street, London, SW3 3TY, as a holder of a section 29 notice relative to the Minke field and in accordance with the Guidance Notes¹ confirm that we hereby authorise Neptune E&P UKCS Limited (company number 03386464), a company incorporated in England and Wales having its registered office at 11 Bressenden Place, London, England SW1E 5BY, to submit on our behalf abandonment programmes relating to the Minke Facilities as directed by the Secretary of State on 18th June 2019.

We confirm that we support the proposals detailed in the Minke Decommissioning Programmes dated 16th July 2019, which is to be submitted by Neptune E&P UKCS Limited in so far as they relate to those facilities in respect of which we are required to submit abandonment programmes under section 29 of the Petroleum Act 1998.

Yours sincerely



Noel Hagan
Mature Assets Manager

For and on behalf of INEOS UK SNS Limited (company number 1021338)

¹ Guidance Notes issued by the Department of Energy and Climate Change on Decommissioning of Offshore Oil and Gas Installations and Pipelines under the Petroleum Act 1998

Attention: Tracey Mackie
Decommissioning Manager
Offshore Petroleum Regulator for Environment and Decommissioning
Department for Business, Energy and Industrial Strategy
3rd Floor, AB1 Building (Wing C)
Crimon Place
Aberdeen, AB10 1BJ

24 July 2019

Dear Ms Mackie,

PETROLEUM ACT 1998
MINKE OFFSHORE INSTALLATIONS SECTION 29 NOTICE DATED 26 OCTOBER 2016
MINKE SUBMARINE PIPELINES SECTION 29 NOTICE DATED 26 OCTOBER 2016

We, Premier Oil E&P UK Limited, confirm our support of the proposals detailed in the Neptune Energy Minke Field Decommissioning Programmes Post-Consultation Draft dated 10 June 2019 (the "Decommissioning Programmes").

We also authorise Neptune Energy E&P UK Limited to submit on our behalf the Decommissioning Programmes to the Secretary of State for approval under section 29 of the Petroleum Act 1998.

Yours sincerely,


Julie Forsyth
Legal Manager

Tel: 01224 615955
Email: jforsyth@premier-oil.com

Attention: Tracey Mackie
Decommissioning Manager
Offshore Petroleum Regulator for Environment and Decommissioning
Department for Business, Energy and Industrial Strategy
3rd Floor, AB1 Building (Wing C)
Crimon Place
Aberdeen, AB10 1BJ

25 July 2019

Dear Ms Mackie,

PETROLEUM ACT 1998
MINKE OFFSHORE INSTALLATIONS SECTION 29 NOTICE DATED 26 OCTOBER 2016
MINKE SUBMARINE PIPELINES SECTION 29 NOTICE DATED 26 OCTOBER 2016

We, Premier Oil PLC, confirm our support of the proposals detailed in the Neptune Energy Minke Field Decommissioning Programmes Post-Consultation Draft dated 10 June 2019 (the "Decommissioning Programmes").

We also authorise Neptune Energy E&P UK Limited to submit on our behalf the Decommissioning Programmes to the Secretary of State for approval under section 29 of the Petroleum Act 1998.

Yours sincerely,



Robin Allan
Director of North Sea & Exploration

Tel: 02078 241030
Email: rallan@premier-oil.com



Attn: Tracey Mackie
Decommissioning Manager
Offshore Petroleum Regulator for Environment and Decommissioning
Department for Business, Energy and Industrial Strategy
3rd Floor, AB1 Building (Wing C)
Crimon Place
Aberdeen, AB10 1BJ

Petroleum Act 1998

London, 30 July 2019

Decommissioning of the Minke Pipelines

Decommissioning of the Minke Field
Installation

Dear Ms. Mackie,

Please be advised that we, DNO North Sea (U.K.) Limited, as a partner in the Minke Field, confirm our support of the proposals detailed in the Neptune Energy E&P UK Limited ("**Neptune**") Minke Pipelines Decommissioning Programme and the Minke Field Installation Decommissioning Programme (together the "**Decommissioning Programmes**") and authorises Neptune to submit the Decommissioning Programme on our behalf to the Secretary of State for approval under Section 29 of the Petroleum Act 1998.

Yours sincerely,

Nick Ingrassia

UK Country Manager



Attn: Tracey Mackie
Decommissioning Manager
Offshore Petroleum Regulator for Environment and Decommissioning
Department for Business, Energy and Industrial Strategy
3rd Floor, AB1 Building (Wing C)
Crimon Place
Aberdeen, AB10 1BJ

Petroleum Act 1998

London, 30 July 2019

Decommissioning of the Minke Pipelines

Decommissioning of the Minke Field
Installation


Dear Ms. Mackie,

Please be advised that we, DNO North Sea PLC, as the guarantor of DNO North Sea (U.K.) Limited, a partner in the Minke Field, confirm our support of the proposals detailed in the Neptune Energy E&P UK Limited ("**Neptune**") Minke Pipelines Decommissioning Programme and the Minke Field Installation Decommissioning Programme (together the "**Decommissioning Programmes**") and authorise Neptune to submit the Decommissioning Programme on our behalf to the Secretary of State for approval under Section 29 of the Petroleum Act 1998.

Yours sincerely,

Nick Ingrassia

UK Country Manager

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	Minke Field Decommissioning Programmes			

9 APPENDICES

9.1 APPENDIX 1: FACILITIES IN THE NLCS

Table 9.1: Pipeline/Flowline/Umbilical Information (NL)

Description	Pipeline Number (as per PWA)	Diameter	Length (km)	Description of Component Parts	Product Conveyed	From – To End Points	Burial Status	Pipeline Status	Current Content
Minke pipeline (NL)	PL2401	8"	11.2	Carbon steel	Gas	UKCS/NLCS boundary – D15-FA 500m zone	Trenched and buried except 50 m from Trench End to Tie in Spool to D15-FA	Operational	Hydrocarbon
Pipeline / Riser Spool Tie-In Flange (NL)	PL2401	8"	0.04	Rigid fabricated steel spool	Gas	D15-FA 500m zone - Riser Spool Tie-In Flange	Exits trench from seabed	Operational	Hydrocarbon
Riser Tie-in Spool (NL)	PL2401	8"	0.05	Rigid fabricated steel spool	Gas	Riser Spool Tie-In Flange - Riser Tie-in Flange	N/A	Operational	Hydrocarbon
EHC Control Umbilical (NL)	PLU2402	90.6mm OD	11.2	Umbilical (copper/ thermoplastic)	Chemicals	D15-FA - UKCS/NLCS boundary	Umbilical is strapped to PL2401 and trenched and buried except 50m at Platform End	Operational	Chemicals



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	Minke Field Decommissioning Programmes			

Table 9.2: Subsea Pipeline Stabilisation Features (NL)				
Stabilisation Feature	Total Number	Weight (Te)	Location(s)	Exposed/Buried/Condition
Concrete mattresses (NL)	14	6 x 3 x 0.15m 76 tonnes	D15-FA approach (Pipeline Tie-In spool and Umbilical)	Exposed

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	Minke Field Decommissioning Programmes			

9.2 APPENDIX 2: PIPELINE AND UMBILICAL HISTORICAL INSPECTION SUMMARY

The following figure and tables outline the findings of the most recent and historical pipeline inspection records. As the data shows, during the most recent survey a single exposure was detected on PL2401 between KP0.008 and KP0.009. This exposure is located within the surface laid section of the pipeline next to the Minke wellhead, which is planned to be removed as part of the decommissioning works. Please note that the 2017 decommissioning survey shows that the depth of cover is not less than 0.6m

Figure 9.1: Minke to D15-FA Pipeline DOB and DOC from KP -0.034 to KP 4.500s

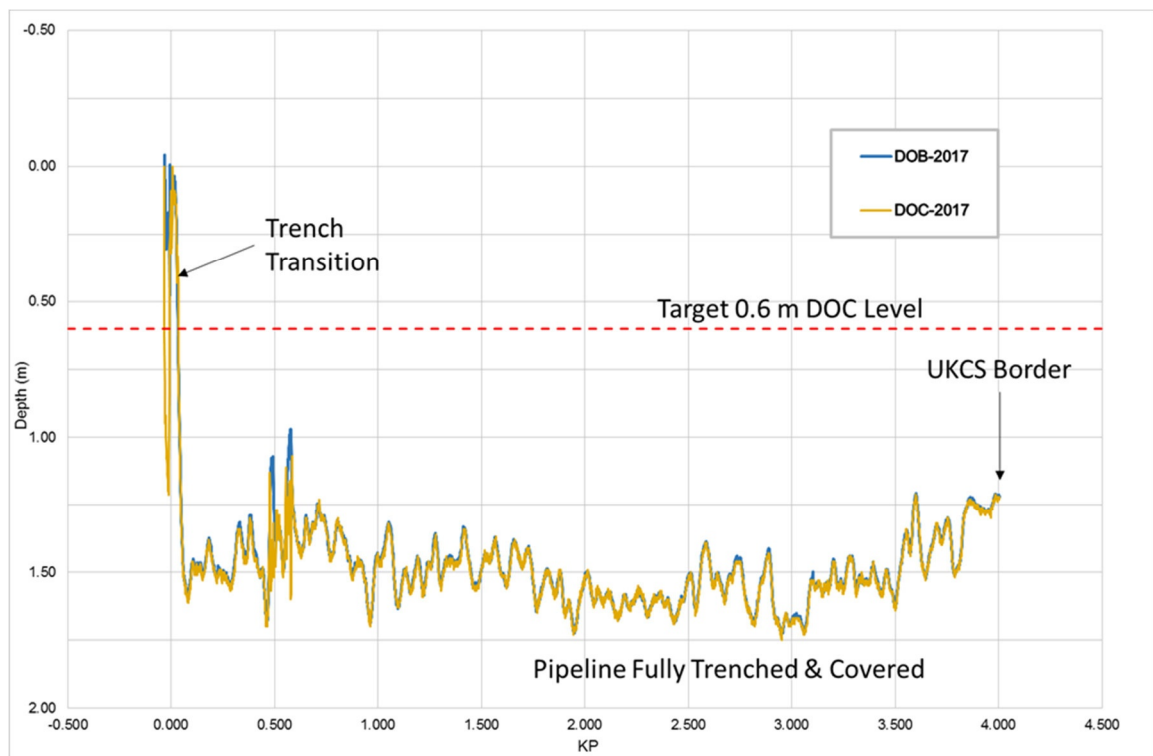


Table 9.3: Inspection Summary for Pipeline PL2401						
Pipeline Length		14.894 km				
Year	Length Surveyed (km)	Exposed Length/ Surveyed Pipeline Length	Rock Cover/ Surveyed Pipeline Length	Mattress Cover/ Surveyed Pipeline Length	No. Spans	Total Span Length (m)
2017	14.927 ^{Note 4}	0.1%	1.0%	0.6%	0	0

Note 4: ROV DOB/DOC survey conducted for UKCS pipeline section only, however an acoustic survey was conducted for the full route length which determined exposures, rock cover, mattress cover and spans.


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	Minke Field Decommissioning Programmes			

Table 9.4: Historical Inspection Summary for Pipeline PL2401							
Pipeline Length		14.894 km					
Year	Survey Type	Length Surveyed (km)	Exposed Length/ Surveyed Pipeline Length	Rock Cover/ Surveyed Pipeline Length	Mattress Cover/ Surveyed Pipeline Length	No. Spans	Total Span Length (m)
2007	GVI	14.848	N/A ^{Note 5}	N/A ^{Note 5}	N/A ^{Note 5}	N/A ^{Note 5}	N/A ^{Note 5}
2012	GVI, GI	14.928	0.1%	0.9%	0.6%	0 ^{Note 6}	0
2016	GVI, GI	14.928	0%	1.0%	0.6%	0	0
2017	GVI, GI	14.927 ^{Note 4}	0.1%	1.0%	0.6%	0	0

Note 5: As-installed pipeline events data is not available.

Note 6: In 2012 spans due to local seabed scour at the pipeline spool adjacent to Minke wellhead were remediated and hence no spans were identified in the 2012 inspection survey.