



Victoria Field: Decommissioning Programmes

NEO-VC-OP-PLN-0001

Final Version

In 2019 Verus Petroleum underwent a name change to become NEO Energy. NEO accepts, agrees and supports previous studies and assessments carried out by Verus. Where appropriate there are references to Verus documentation published prior to this date.

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Document Control

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Revision Control

Rev No:	Definition	Changes:	Issue Date:
A1		Develop outline programme	
A2	First Draft		22/12/2017
B1	Revised and updated draft	OPRED comments addressed and outcome from CA and Environmental Appraisal (EA) included	31/07/2018
C1	Revised and updated draft	OPRED comments addressed and revised schedule included	01/03/2019
D1	Revised and updated draft	OPRED comments addressed (dated July 2019) and revised schedule included	27/09/2019
E1	Revised and updated draft	OPRED comments addressed (dated June/July 2020)	05/11/2020
F1	Revised and updated review	OPRED comments addressed (dated Nov 2020)	12/11/2020
01	Revised for Issue	OPRED comments addressed (dated Dec 2020)	14/12/2020
02	Issued for consultation	Finalised for consultation	14/12/2020
03	Revised for Issue	OPRED comments addressed	20/08/2021
04	Revised for Issue	OPRED comments addressed	03/02/2022
05	Final Version	OPRED comments addressed, LoS Included	15/03/2022

Distribution List

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Abbreviations

Abbreviation	Definition
BD	Bravo Drilling
BEIS	Department for Business, Energy and Industrial Strategy
CA	Comparative Assessment
CEFAS	Centre for Environment, Fisheries and Aquaculture Science
CNS	Central North Sea
CoP	Cessation of Production
CSV	Construction Support Vessel
DP	Decommissioning Program
DSV	Dive Support Vessel
EA	Environmental Appraisal
EMS	Environmental Management System
FDP	Field Development Plan
HSE	Health and Safety Executive
ICES	International Council for the Exploration of the Sea
JNCC	Joint Nature Conservation Committee
km	Kilometre(s)
LAT	Lowest Astronomical Tide
m	Metre(s)
MeOH	Methanol
MMO	Marine Management Organisation
MOD	Ministry of Defence
n/a	Not Applicable
NEO Energy	NEO Energy Holdings Limited (formerly Verus Petroleum)
NFFO	National Federation of Fishermen's Organisations
OEIT	Offshore Environmental Inspectorate
OGA	Oil & Gas Authority
OPRED	Offshore Petroleum Regulator for Environment & Decommissioning
P&A	Plug and Abandonment
PETS	Portal Environmental Tracking System
PLONOR	Pose Little or No Risk to the Environment
SAC	Special Area of Conservation
SNS	Southern North Sea
Te	tonnes
WHPS	Wellhead Protective Structure
WoW	Waiting on Weather

Definitions

Term	Definition
Non-Operated	NEO Energy has a Joint Venture Agreement through equity share, but is not duty-holder
Operated	NEO Energy is the duty-holder for installation, wells, pipelines (or combination thereof)
Operated-outsourced	NEO Energy holds the licence but another company is the duty-holder for the installation, wells, pipelines (or combination thereof)
OPRED	Offshore Petroleum Regulator for Environment and Decommissioning, which is part of the Department for Business, Energy and Industrial Strategy

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1 Executive Summary

In 2020 Verus Petroleum (SNS) Limited underwent a change to become NEO Energy (SNS) Limited hereinafter referred to as NEO. NEO accepts, agrees and supports previous studies and assessments carried out by Verus. Where appropriate there are references to Verus documentation published prior to this date. Please note, although Chrysaor are now known publicly as Harbour Energy, the section 29 notices and decommissioning liabilities remain with Chrysaor Production (U.K.) Limited. Throughout the document any references to Harbour and Chrysaor refer to the same organisation.

1.1 Decommissioning Programmes

This document contains two decommissioning programmes:

- a programme for the Victoria Field Installations (DP1)
- a programme for the Victoria Pipeline and Umbilical (DP2)

1.2 Requirements for Decommissioning Programmes

1.2.1 Installations

In accordance with the Petroleum Act 1998, the Section 29 notice holders of the Victoria Field (see Table 1.2) are applying to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) to obtain approval for decommissioning the installations detailed in Section 2.1 and 2.2 of these programmes. (See also Section 8 – Partner Letter of Support).

1.2.2 Pipeline & Umbilical

In accordance with the Petroleum Act 1998, the Section 29 notice holders of the PL2526 and PLU2527 pipelines (see Table 1.4) are applying to OPRED to obtain approval for decommissioning the pipeline and umbilical detailed in Section 2.3. (See also Section 8 – Partner Letter 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 section 6.3 is for a decommissioning project anticipated to begin in June 2022, subject to vessel availability, with the aim being to submit a close-out report to OPRED by the end of Q4 2022. In the event that there is no vessel availability to execute the scope in 2022, the work will be rescheduled to 2023.

1.3 Introduction

The Victoria Field, located in the southern North Sea (49/17) in a water depth varying between 21m and 27m Lowest Astronomical Tide (LAT), was discovered in January 2007 by Silverstone Energy. The exploration well, 49/17-14, was subsequently plugged and abandoned. A Field Development Plan (FDP) was submitted and approved in 2007. Appraisal well 49/17-14a was completed as a vertical and hydraulically fractured production well in August 2008. The Victoria Field was developed as a subsea tie-back to the Viking BD platform, some 3.8 km away. Production commenced in October 2008, with gas being exported to the Theddlethorpe terminal via the Chrysaor operated Viking B complex. Cessation of Production (CoP) was approved (and occurred) in January 2016.

The Victoria infrastructure comprises a horizontal subsea Xmas tree, wellhead and integrated wellhead protective structure (WHPS), and the Victoria valve skid. The well is tied back with 3.8 km of six-inch steel pipeline and a 3.95 km umbilical, along with associated spools and jumpers. The infrastructure is protected by 150 concrete mattresses, 13 frond mattresses and approximately 242 grout bags.

A survey of the pipeline and umbilical status was completed by Fugro in April 2021. This survey confirmed both the pipeline and umbilical remain predominately buried over their lengths with only a few instances of pipe and mattress exposure being noted and no evidence of any free spanning.

The decommissioning programmes outlined in this document explain the selection of the removal activities and is supported by an Environmental Appraisal (EA) (NEO-VC-OP-PLN-0002).

1.4 Overview of Installations/Pipelines Being Decommissioned

1.4.1 Installations

Table 1.1 Installations being decommissioned

Field	Victoria	Production Type (Oil/Gas/Condensate)	Gas & Gas Condensate
Water depth (m)	21 – 27	KCS Block	49/17
Distance to Median (km)	45	Distance from nearest UK coastline (km)	87 to Bacton, UK
Surface Installation			
Number	Type	Topside Weight (Te)	Jacket Weight (Te)
n/a			
Subsea Installations		Number of Wells	
Number	Type	Platform	Subsea
1	Valve Skid	0	1
1	Wellhead Protective Structure		
Number of Drill Cuttings pile(s)		0	

Table 1.2 Installations Section 29 Notice Holders Details

Company	Registered Company Number	Equity
NEO Energy (SNS) Limited	SC 291165	50%
NEO Energy (CNS) Limited	SC 309081	25%
Chrysaor Production (U.K.) Limited	00524868	25%
NEO Energy Upstream UK Limited	SC 279865	0% (served as an associate company)
Britoil Limited	SC 077750	0% (exited from licence)

1.4.2 Pipeline & Umbilical

Table 1.3 Pipelines and umbilicals being decommissioned

Number of Pipelines	1 (PL2526)	See Section 2
Number of Umbilicals	2 (PLU2527)	See Section 2

Table 1.4 Pipeline(s) Section 29 Notice Holders Details

Company	Registered Company Number	Equity
NEO Energy (SNS) Limited	SC 291165	50%
NEO Energy (CNS) Limited	SC 309081	25%
Chrysaor Production (U.K.) Limited	00524868	25%
Britoil Limited	SC 077750	0% (exited from licence)

1.5 Summary of proposed decommissioning programmes

Table 1.5 Summary of decommissioning programmes

Selected Option	Reason for Selection	Proposed Decommissioning Solution
Topsides		
n/a		
Jacket(s)/Floating Facility (FPSO etc.)		
n/a		
Subsea installations		
Remove wellhead protective structure (WHPS) by drill rig during well P&A operations. The WHPS is not piled to the seabed.	Remove seabed structure and leave a clear seabed	Removal is to shore for recycling, reuse or disposal
Remove Victoria Valve Skid and roof panel by DSV. The valve skid is piled into the seabed	Remove seabed structures and leave a clean seabed	The Skid has no pad eyes and will be removed by lifting with soft slings on dedicated lifting points. Piles will be removed by internal cutting to three metres below seabed
Remove mattresses, fronded mattresses and any grout bags associated with the skid and WHPS. The number of mattresses is reported in Table 2.2	Remove seabed structures and leave a clean seabed	All mattresses (wholly or partially) visible will be removed where safe to do so
Pipeline & Umbilical		
Leave pipeline PL2526 and umbilical PLU2527 <i>in situ</i> , removing the spool and pipeline ends and adding remediation where and if appropriate.	<p>This was the best scoring alternative from the Comparative Assessment (CA)</p> <p>This option has markedly lower requirements for: subsea intervention, lower risk to the decommissioning workforce offshore and associated transport on land (Safety); lowest impact on environmental receptors (Environmental Risk); lowest energy and atmospheric emissions due to lower vessel time and onshore requirements (Energy use and Atmospheric Emissions); a lower risk to snagging or loss of fishing gear (Societal); and was the least expensive option (Economic)</p>	<p>Remove the ends of the pipeline and umbilical above natural seabed and within the trench transition zones at the Victoria and Viking BD platform ends and recover to shore for disposal.</p> <p>Pipeline and umbilical ends and any exposures deemed to pose a risk to fisheries will be reburied to a depth >0.6m. There is no intention to employ rock as remediation on pipeline and umbilical ends.</p> <p>Mattresses at each of the above locations will be removed and recovered to shore for disposal.</p> <p>The number of mattresses is reported in Table 2.2</p> <p>The pipeline and umbilical have been trenched and are buried and will be decommissioned <i>in situ</i>.</p>
Leave <i>in situ</i> the PL2526/PLU2527 pipeline crossing over 3 rd party Viking AR pipelines (PL88, 24" gas pipeline and PL134, 3" MeOH pipeline)	Viking AR pipelines have been decommissioned <i>in situ</i> . Leaving crossing in-place will reduce disturbance to the seabed and disruption to North Norfolk Sandbanks and Saturn Reef Special Area of Conservation (SAC)	<p>The previous pipeline survey indicated that only a portion of the mattresses over the crossing were visible, indicating that they have been buried by the sediment.</p> <p>An ROV and clear seabed survey will be undertaken to assess the safety of the crossing to fishermen.</p> <p>Any snagging concerns will be remediated following consultation with OPRED</p>

Well		
Abandoned in accordance with Oil & Gas UK guidelines for the Plug and Abandonment of Wells	Meets OGA's regulatory requirements, as well as the Health and Safety Executive (HSE) requirements	It is expected that the well will be plugged and abandoned (P&A) during a well P&A campaign. NEO is working with OGA and contractors to identify the most cost-efficient approach. A PON5/Portal Environmental Tracking System (PETS) and Marine Licence application under the relevant regulations will be submitted in support of works carried out

Drill Cuttings		
n/a		

Interdependencies

A well survey was carried out – no issues seen. Risk assessment also carried out and we are monitoring actions.

A rigid tie-in spool and a controls jumper connect between the subsea Xmas tree and the Victoria Valve Skid and will need to be disconnected at the tree to facilitate removal of same. Prior to carrying out such disconnection the tie-in spool and jumper shall be vented and flushed as part of the venting/flushing campaign for the pipeline and umbilical to be carried out by the DSV.

The well P&A works (with the exception of the removal of the integrated WHPS) will be undertaken separately from the recovery of the subsea equipment.

The pipeline decommissioning programme (DP) proposes to decommission the pipeline crossing and associated protective structures in place (see Appendix 3 for schematic). This aligns with the *in situ* decommissioning of Harbour Energy's Viking A 24" and 3" pipelines that PL2526 and PLU2527 cross.

Other decommissioning works may be in progress on adjacent fields and schedules may have to be amended to avoid conflicts with simultaneous operations

1.6 Field Location Including Field Layout & Adjacent Facilities

The Victoria gas field lies in the United Kingdom Continental Shelf (UKCS) Block 49/17 in the southern North Sea (Figure 1-1). The field layout is provided in Figure 1.2.

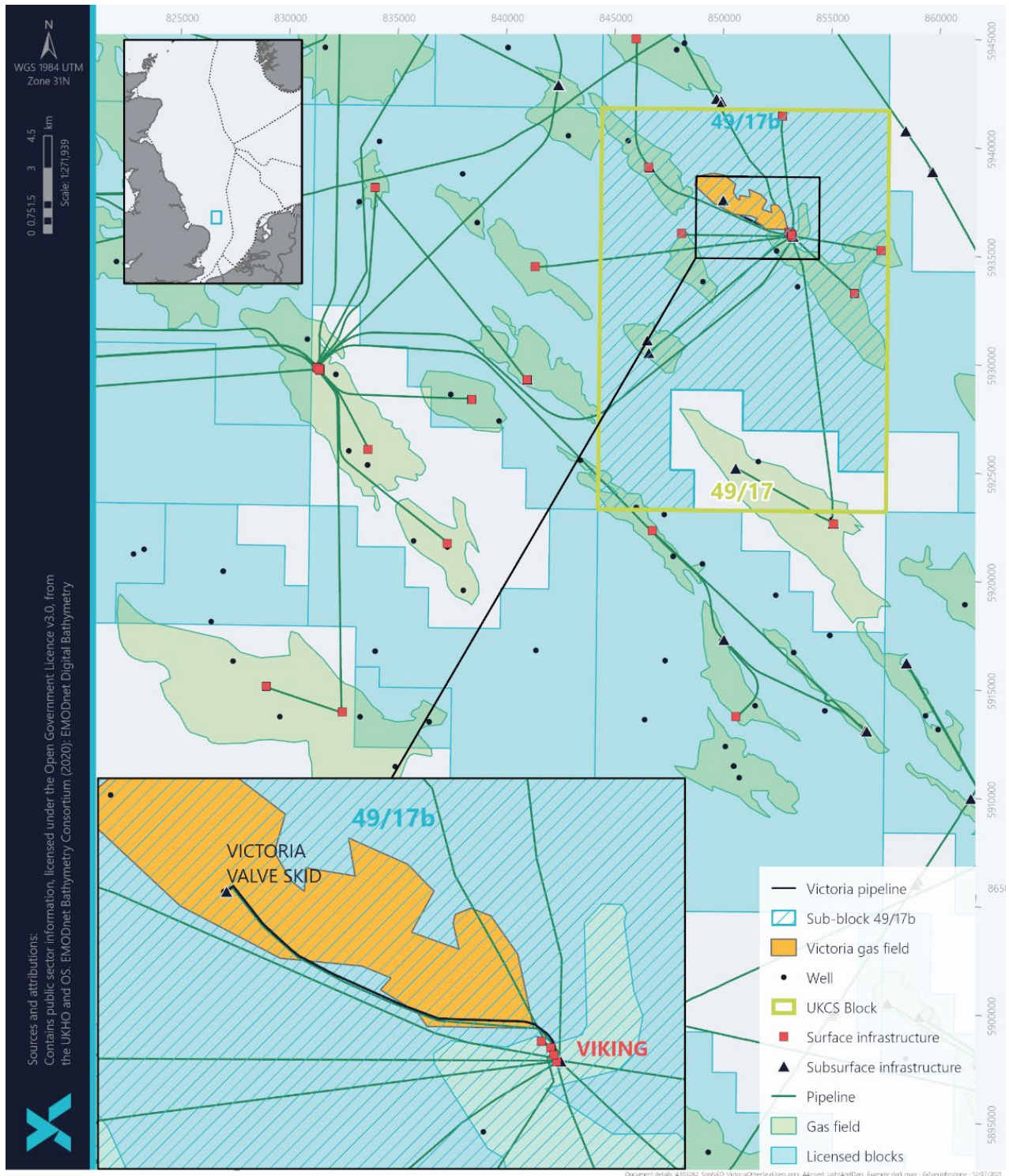


Figure 1.1: Field Location in UKCS

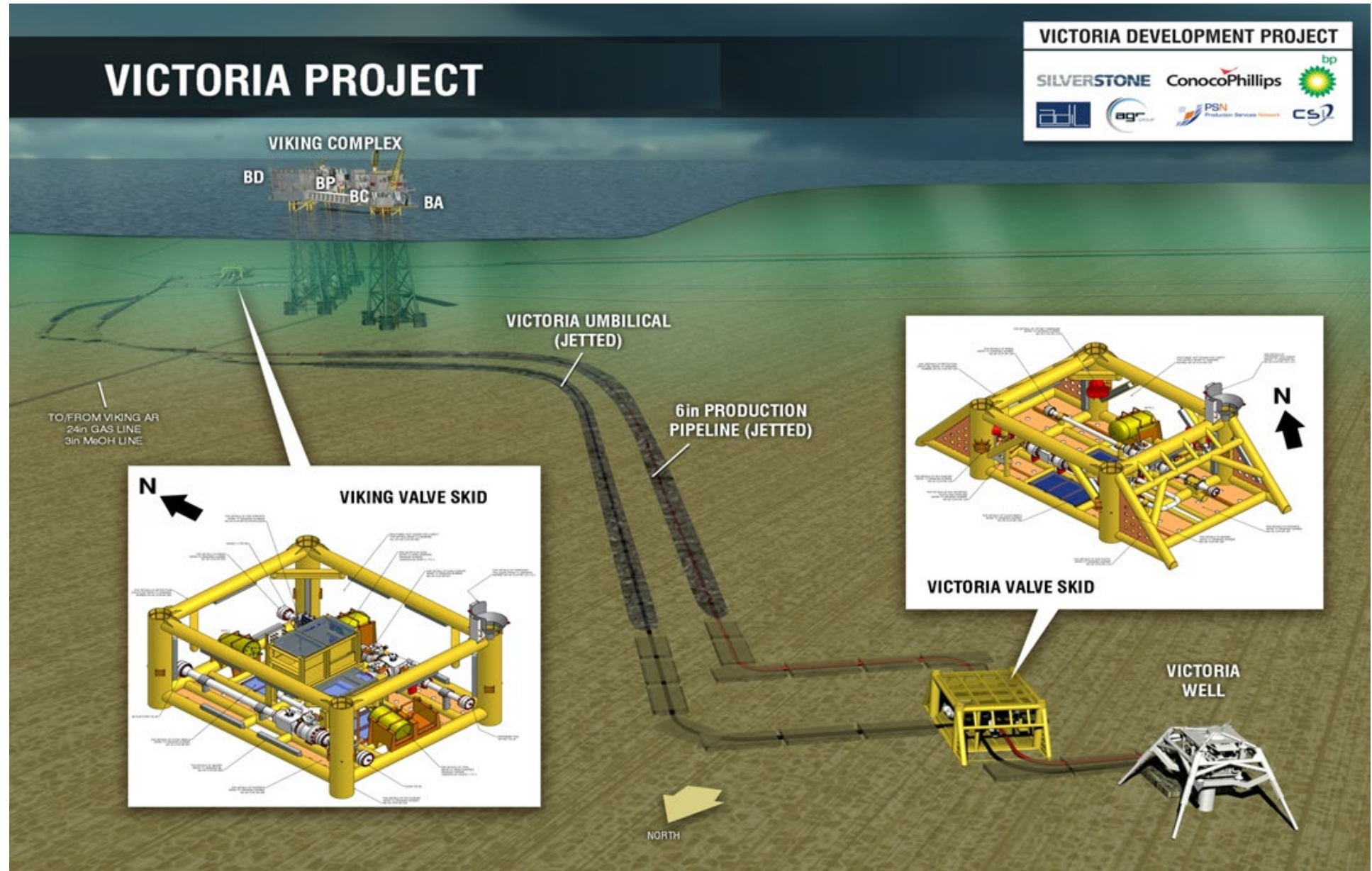


Figure 1.2: Field Layout

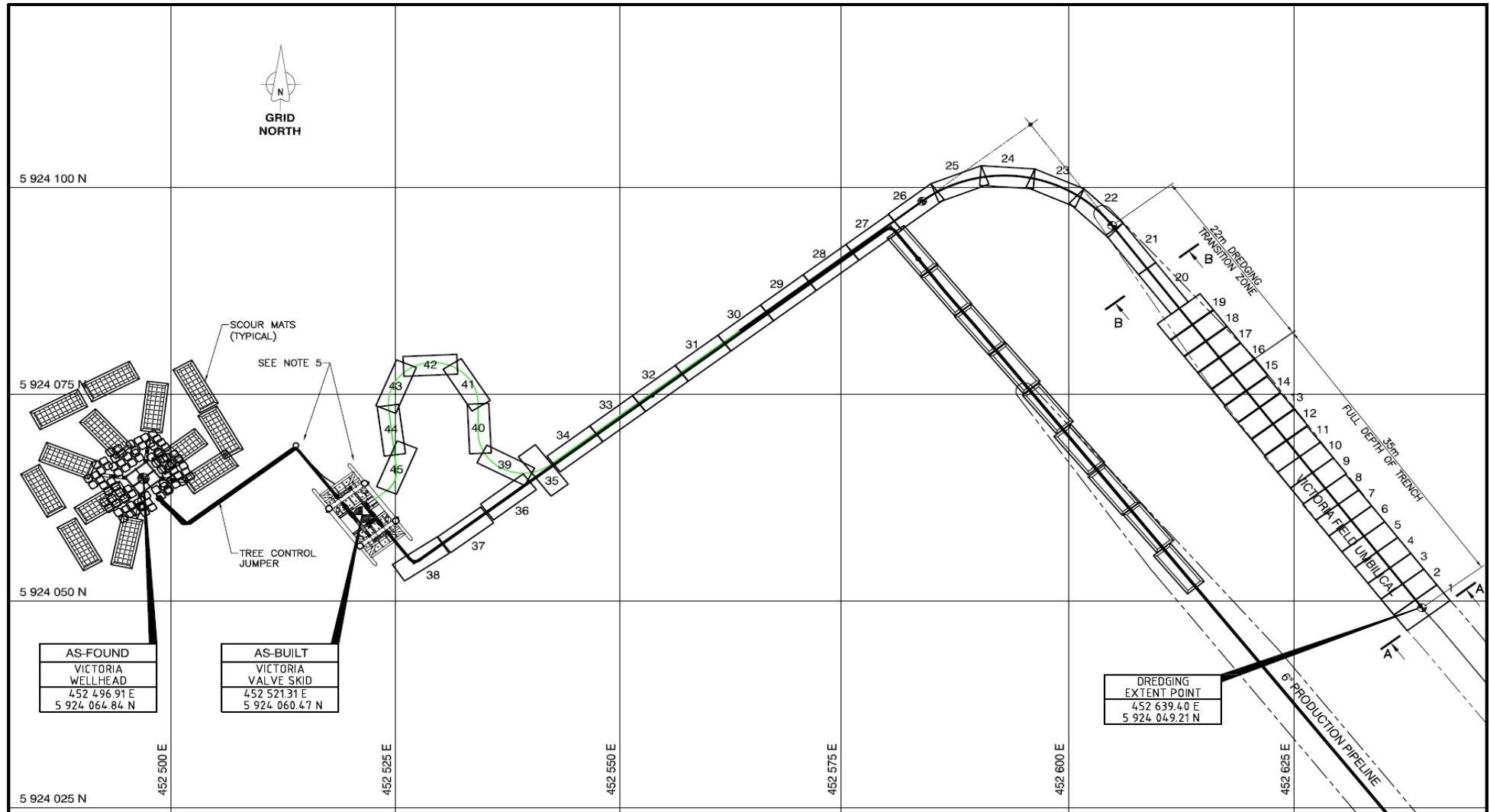


Figure 1.3 Overview of Victoria subsea infrastructure from the Victoria well to the Viking BD Skid.

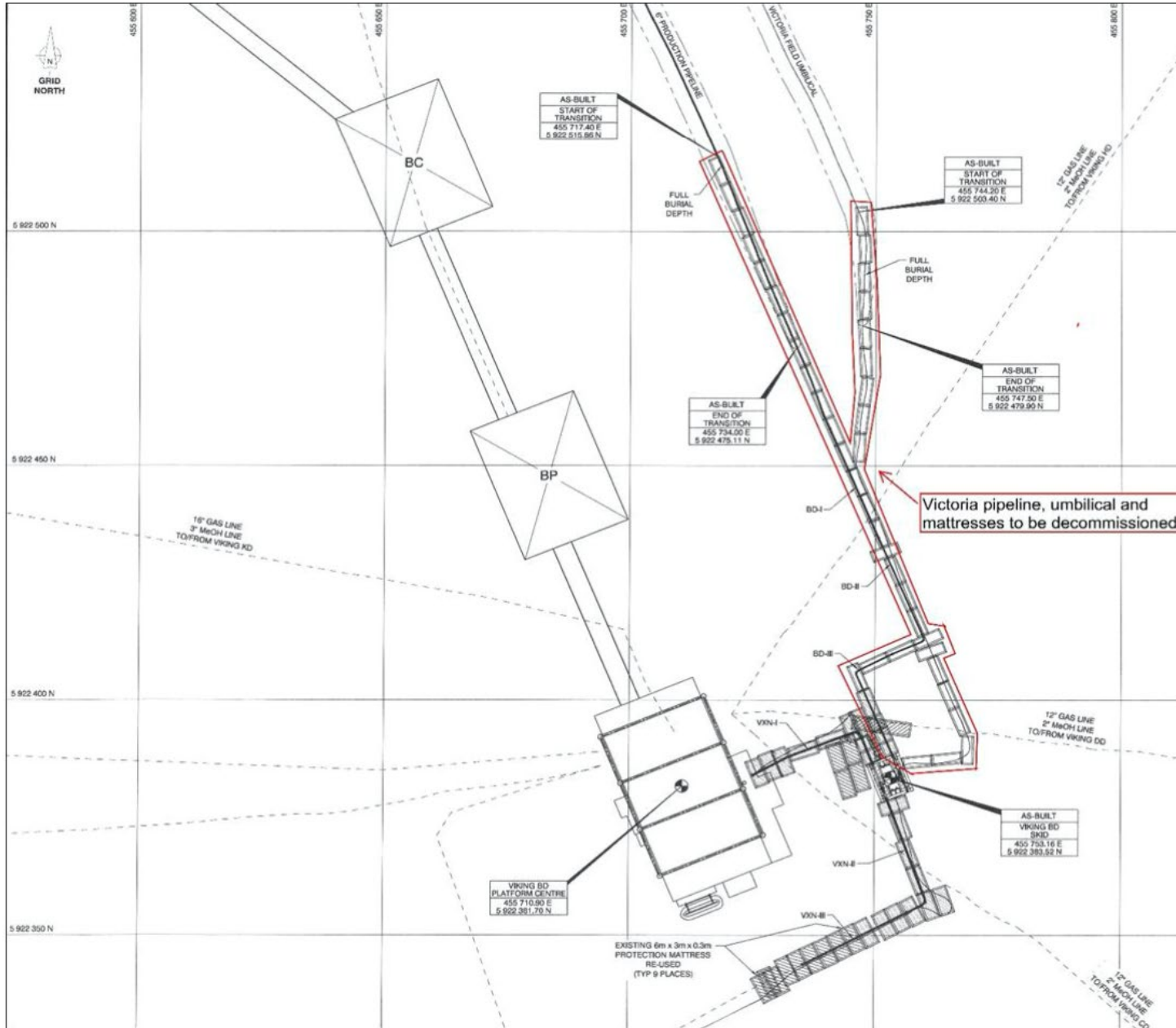


Figure 1.4: Overview of Victoria subsea infrastructure to the Viking BD skid

1.7 Adjacent Oil & Gas Facilities

The Victoria subsea infrastructure is located in the Southern North Sea (SNS) gas basin which is densely populated by various installations (Figure 1.3). The platforms and other infrastructure located within 15 km from the Victoria subsea infrastructure, are listed in Table 1.6.

Table 1.6 Adjacent Facilities

Owner	Name	Type	Distance (km)	Direction	Status
Chrysaor Production (U.K.) Limited	Viking B Drilling	Platform	0.13	SE	Platform removed
Chrysaor Production (U.K.) Limited	Viking B Compression	Platform	0.27	NW	Platform removed
Chrysaor Production (U.K.) Limited	Viking B Accommodation	Platform	0.6	NW	Platform removed
Chrysaor Production (U.K.) Limited	Viking Golf	Platform	9.4	W	Platform removed
Chrysaor Production (U.K.) Limited	Viking Delta	Platform	7.87	E	Platform removed
Chrysaor Production (U.K.) Limited	Viking Charlie	Platform	7.48	SE	Platform removed
Chrysaor Production (U.K.) Limited	Viking Hotel	Platform	10.19	N	Platform removed
Chrysaor Production (U.K.) Limited	Viking Lima	Platform	13.49	NW	Platform removed
Alpha Petroleum	Wenlock NUI platform	Platform	14.12	NNW	Operating
Chrysaor Production (U.K.) Limited	Viking Valve Skid	Skid	immediate vicinity (connected to)		

Impacts of Decommissioning Proposals

There are also approximately 7 wells and 22 pipelines located within 100m radius of the Victoria subsea infrastructure all of which are out of service and in various stages of decommissioning.

The Victoria pipeline is connected to the Viking BD Skid. The Viking BD Skid is owned by Chrysaor and access to this skid has been granted by Chrysaor to allow the flushing of the Victoria pipeline.

Decommissioning of the Viking BD skid is the responsibility of Chrysaor and not included in the Victoria DP.

1.8 Industrial Implications

On approval of the DP NEO will invite tenders for the main work scopes. For all work scopes NEO will schedule the work to provide a large window of operations to allow contractor flexibility with the intent of minimising costs.

NEO will prequalify a select number of contractors with experience of similar scopes and availability of vessels in this area. Ideally, decommissioning of the subsea infrastructure, inclusive of the venting and flushing operations, will be carried out within one mobilisation of a DSV. However, this will be confirmed following a review of the tender submissions and identification of the preferred Contractor.

NEO intends to undertake the well P&A works, as part of a multi-well campaign through Fraser Well Management. Well P&A activities (other than integrated WHPS removal) are not considered in the scope of this DP.

Recovered items from the field will be transported to a designated shore base and received by a recognised and approved materials/ waste management contractor for onward reuse, recycling or disposal. This waste management contractor will be selected following a tendering process and an environmental and safety audit by NEO.

2 Descriptions of items to be decommissioned

2.1 Installation: Surface Facilities (Topsides/Jackets/FPSO etc.)

Table 2.1: Surface Facilities Information

Name	Facility Type	Location	Topsides/ Facilities		Jacket (if applicable)			
			Weight (Te)	No. of modules	Weight (Te)	Number of legs	Number of piles	Weight of piles (Te)
n/a								

2.2 Installations: Subsea Including Stabilisation Features

Table 2.2: Subsea Installations & Stabilisation Features (Victoria end)

Subsea installations including Stabilisation Features	No:	Size Weight (Te)	Latitude	Longitude	Eastings	Northings	Comment/ Status
Wellhead & WHPS	1	45	53° 27' 44.115" N	02° 17' 01.199" E	452496.91	5924064.84	Well will undergo plug and abandonment. The WHPS is connected to the wellhead and not piled to seabed
Valve Skid – Manifold	1	11.2 x 6 x 3.1m (LxWxH); 41 Te in air plus 9 Te for the piles, roof not included	53° 26' 50.895" N	02° 20' 01.407" E	452521.31	5924060.47	Structure is secured to the seabed by four steel piles
Protection Frame(s) – Roof Panel	1	7 tonnes	53° 26' 50.895"N	02° 20' 01.407" E	452521.31	5924060.47	Will be removed with the Valve Skid in a single lift
Concrete mattresses	60	6 x 2.4 x 0.15m (4 Te each)	Within the trench transitions and over the pipeline and wellhead tie-in spools			Out of the 60 concrete mattresses present at Victoria, 15 currently protecting the umbilical and buried by approximately 1 m of sediment shall be decommissioned in-situ to avoid further dredging and seabed disturbance. All other 45 mattresses shall be removed and recovered.	
Grout bags	Est. 242	0.00025 each	These are believed to have been used to support the swan neck at the valve skid and at the crossing over Viking AR 24" and 3" pipelines			Unknown	
FronD Mats (Anti-scour mattresses around the wellhead)	13	6 x 2.4 x 0.15m (4 Te each)	Around the wellhead protection structure at the Victoria well			All frond mats will be removed	
Rock Dump	0						

2.3 Pipelines

Table 2.3: Pipeline, Flowline, Umbilical Information

Description	Pipeline Number (as per PWA)	Diameter (inches)	Length (km)	Description of Component Parts	Product Conveyed	From – To End Points	Burial Status	Pipeline Status	Current Content
Production Pipeline	PL2526	6	3.80	Steel 6" nominal bore, 12.7mm to 15.9mm wall thickness; 2.5mm, 3LPE anti-corrosion coating	Gas and condensate	Victoria well to Subsea Valve Skid adjacent to Viking BD Platform	Trenched and Buried	Out of Use	Hydrocarbon in line
Umbilical	PLU2527	Outside 4.25	3.95	Umbilical	Chemicals and Hydraulic Fluid	Victoria well to Subsea Valve Skid adjacent to Viking BD Platform	Trenched and Buried	Out of Use	Chemicals in line

2.4 Subsea Pipelines Stabilisation Features

Table 2.4: Subsea Pipelines and Umbilical Stabilisation Features (Viking end)

Stabilisation Feature	Total Number	Weight (Te)	Location	Exposed/Buried/Condition
Concrete mattresses	45	4 each	At the AR crossing location	Mostly buried/ some exposed
Concrete mattresses	45	4 each	At the trench transitions and over the pipeline tie-in spools at the Viking BD Valve Skid Location	Mostly buried/ some exposed
Grout bags	0			
Froned Mats	0			
Rock	0			

2.5 Well

Table 2.5: Well Information

Platform Wells	Designation	Status	Category of Well
n/a			
Subsea Well	Designation	Status	Category of Well
49/17-14	Gas and Condensate	Suspended	

2.6 Drill Cuttings

Table 2.6: Drill Cuttings Pile Information

Location of Pile Centre (Latitude/Longitude)	Seabed Area (m ²)	Estimated volume of cuttings (m ³)
n/a		

2.7 Inventory Estimates

The expected tonnage of the subsea installations and pipeline materials to be decommissioned are listed in Table 2.7, with Figures 2.1 and 2.2 graphically illustrating percentages by component.

Table 2.7: Victoria Decommissioning Estimated Materials Inventory

Components	Material	Weight (Te)	Percentage
Subsea Installations*	Steel	99.10	25.1%
	Non-ferrous metals	2.45	0.6%
	Plastic	0.45	0.1%
	Cement/ Concrete	292.06	74.1%
	NORM/Haz	0.00	0.0%
	Other	0.00	0.0%
	Total Subsea Installations	394.00	100.0%
Pipelines	Steel	226.75	35.5%
	Non-ferrous metals	6.20	1.0%
	Plastic	29.80	4.7%
	Cement/ Concrete	375.00	58.7%
	NORM/Haz	0.00	0.0%
	Other	0.00	0.0%
	Anodes (aluminium)	1.25	0.2%
	Total Pipelines	639.00	100.0%
	Total weight (Tonnes)	1,033	

*Including wellhead components

Subsea Installations Estimated Inventory

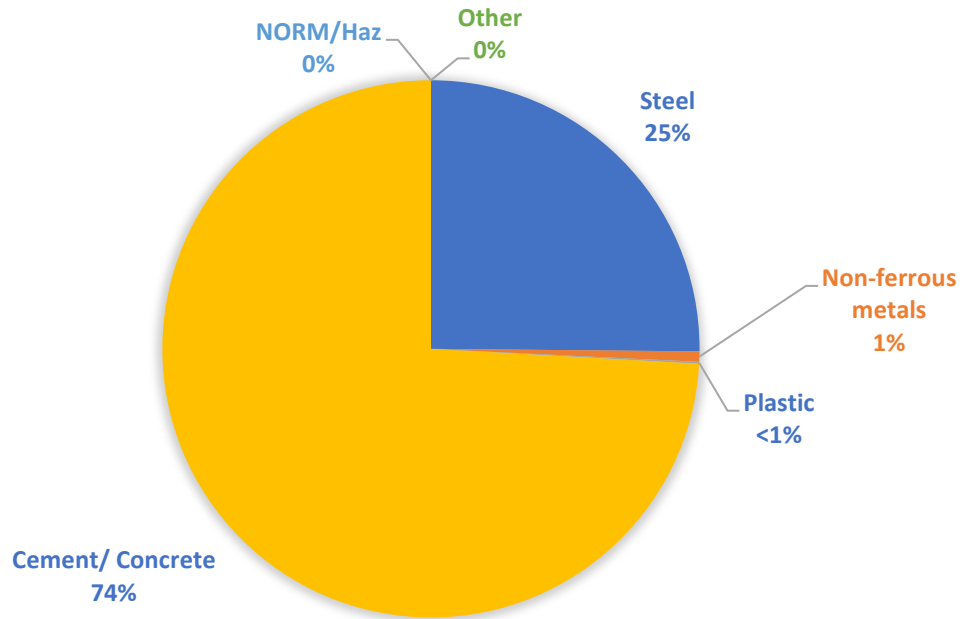


Figure 2.1: Pie Chart of Estimated Inventory for Subsea Installations

Pipelines Estimated Inventory

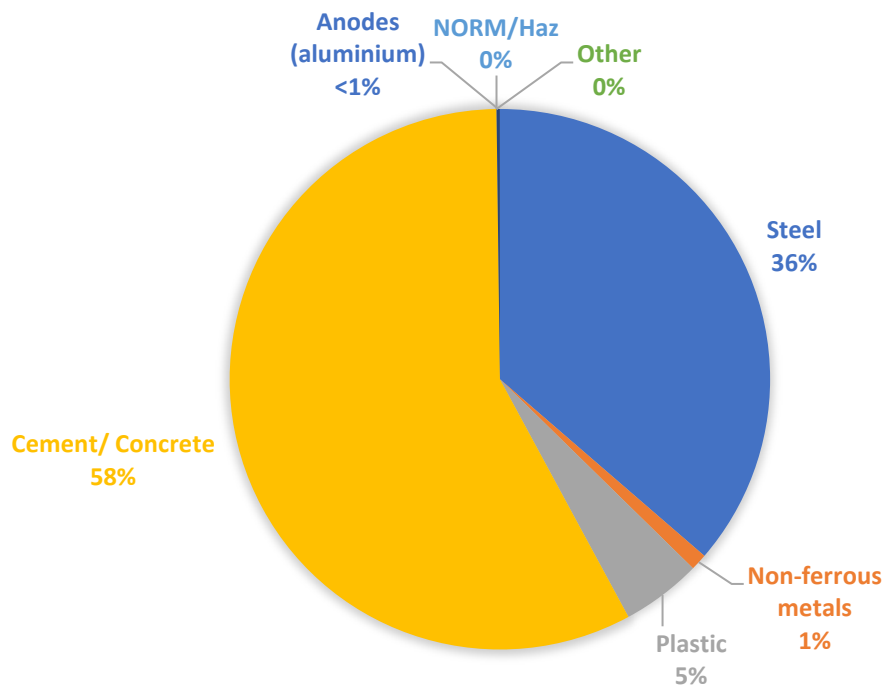


Figure 2.2: Pie Chart of Estimated Material Inventory for Pipelines

3 Removal & Disposal Methods

In line with waste hierarchy principles, reuse of subsea installations (or parts thereof) was first in the order of preferred decommissioning options for assessment. The reuse of the wellhead, wellhead protection structure (WHPS) and valve skid are not considered likely, but the option will be considered.

Recovered infrastructure will be returned to shore and transferred to a suitably licensed decommissioning facility. It is expected that the structures, spool pieces and umbilical would be cleaned before being recycled. Concrete mattresses and grout bags will be cleaned of marine growth onshore if required, and either reused, recovered as aggregate for infrastructure projects, or sent to landfill.

NEO will continue to engage with other companies and wider industries to discuss reuse opportunities. NEO believes that any further reuse or resale opportunities will be best achieved through the tendering and selection of a waste management contractor with the required knowledge and experience in this area. Final disposal routes and historical performance will be a key consideration within the tendering process to ensure the aims of the waste hierarchy are best achieved.

3.1 Subsea Installations & Stabilisation Features

Table 3.1 Subsea Installations and Stabilisation Features (Victoria end)

Subsea Installations & Stabilisation Features	Number	Option	Disposal Route (if applicable)
Wellhead	1	Full recovery as part of campaign to P&A wells	Return to shore for reuse or recycling
Valve Skid	1	Full Recovery	Return to shore for reuse or recycling
Protection Frame	1	Full Recovery	Recover to drill rig and transport ashore for disposal
Grout Bags	242	Full recovery of any found at the Victoria location	Recover to vessel and transport ashore for disposal
Froned Mats	13	Full recovery	Recover to vessel and transport ashore for disposal
Concrete mattresses	60	45 for full recovery 15 to be decommissioned in situ as ongoing protective covering	Recover to vessel and transport ashore for disposal or decommission in situ for remediation/ ongoing protective cover
Rock Dump*	0		

* NEO will not be using rock cover as remediation for pipeline or umbilical exposures now or in the future. As outlined in the supporting EA document, the results of the 2021 survey (Appendix 4) show that, with just a few noted exceptions at two sandwave locations, the trenched pipeline and umbilical have adequate depth of cover to offer protection to and from fishing gear interaction and this is expected to remain the case, even when sand wave movement is taken into account. Thus, with the plan being to remove those currently “at risk” pipeline and umbilical sections within the aforementioned sandwaves, there is no requirement to employ any other remediation measures.

3.2 Pipelines

3.2.1 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
PL2526	Trenched and Buried	Whole of Pipeline	Options 4,6,7,8
PLU2527	Trenched and Buried	Whole of Pipeline	Options 1,4,6,7,8

*Key to Options:

1) Remove – reverse reeling; 2) Remove – Reverse S lay; 3) Trench and Bury; 4) Remedial removal; 5) Remedial trenching; 6) Partial removal; 7) Leave in place; 8) Cut and Lift; 9) Remedial rock-dump; 10) Other (describe)

3.3 Comparative Assessment Method

Five options for the decommissioning of the Victoria pipeline and umbilical were considered within the Comparative Assessment (CA). In addition, the CA also compared six flushing options for flooding and degassing the pipeline. NEO have chosen to include the flushing options for the pipeline as part of the CA in order to consider whether flushing to sea would be a viable option in comparison to treatment and downhole disposal. The individual pipeline decommissioning and flushing options were assessed against five main criteria: Technical Feasibility; Safety; Environmental; Societal; and Economic.

In preparation for the CA, NEO identified and described the decommissioning options, decided upon the assessment criteria (and sub-criteria) to be used, and established the weighting to be applied to scores for the individual assessment criteria. A workshop was conducted in November 2017 to assess the technical feasibility and environmental and societal risks.

All options, which scored between minor and moderate for technical feasibility, were taken forward for further assessment against the remaining criteria. The remaining criteria were assessed against a mix of qualitative and quantitative approaches. To enable a comparison to be made of the decommissioning options, the results were collated and compared using a normalised/ weighted scoring system. The results of each of the assessments were expressed in common units and ranked in order of performance from best to worst, based on the weightings. The outcome from the CA is summarised in Table 3.3. The quantity, selected option and disposal route for the stabilisation materials is provided in Table 3.4.

3.4 Outcome of Comparative Assessment

Table 3.3: Outcome of Comparative Assessment

Pipeline or Group	Recommended Option*	Justification
PL2526	Leave <i>in situ</i> – The pipeline will be cut at the ends for removal of the spools and midline sections (approximately 240 m length in total) at two sand wave locations. The remainder of the pipeline will be decommissioned <i>in situ</i> . The pipeline ends which present a risk to fisheries will be re-buried to at least 0.6 m below the seabed if not already at/beyond that depth.	The leave <i>in situ</i> option has markedly lower requirements for: subsea intervention, lower risk to the decommissioning workforce offshore and associated transport on land (Safety); lowest impact on environmental receptors (Environmental Risk); lowest energy and atmospheric emissions due to lower vessel time and onshore requirements (Energy Use and Atmospheric Emissions); lowest risk of snagging or loss of fishing gear (Societal); and was least expensive option (Economic)
	Flush the pipeline to sea – Use a single vessel to vent the pipeline to sea at Victoria valve manifold and allow free flood from Victoria. Relocate vessel to Viking BD Skid and flush remaining contents to sea. The umbilical ends will be retrenched and buried to a depth of at least 0.6 m below the seabed	Flushing to sea is the second-best scoring option. It was selected due to potential concerns to divers during decommissioning activities from gas that may be trapped in the pipeline if the pipeline was only free flooded with no flushing of the line
PLU2527	Leave <i>in situ</i> – The umbilical will be cut at the ends for removal of the spools and midline sections (approximately 240 m length in total) at two sand wave locations. The remainder of the pipeline will be decommissioned <i>in situ</i> . The pipeline ends which present a risk to fisheries will be re-buried to at least 0.6 m below the seabed if not already at/beyond that depth.	This leave <i>in situ</i> option has markedly lower requirements for subsea intervention, lower risk to the decommissioning workforce offshore and associated transport on land (Safety), lowest impact on environmental receptors (Environmental Risk), lowest energy and atmospheric emissions due to lower vessel time and onshore requirements (Energy Use and Atmospheric Emissions), lowest risk of snagging or loss of fishing gear (Societal) and was least expensive option (Economic)
	The methanol within the umbilical will be flushed, and the contents allowed to dissipate naturally.**	The umbilical contains water soluble methanol (MeOH) and hydraulic fluid. These chemicals are considered to pose little or no risk to the environment (PLONOR). Flushing and leaving the umbilical poses a low environmental risk

* Victoria Subsea Infrastructure Decommissioning Comparative Assessment (2018), undertaken by Verus, (NEO's predecessor) but NEO support and agree the recommendations.

** The above proposal is subject to agreement from the decommissioning contractor. If this is considered to present a safety hazard then intent will be to flush the methanol cores prior to cutting and recovery of umbilical ends. Total volume of methanol to be displaced is < 2m³.

3.5 Pipeline Stabilisation Features

Table 3.4: Pipeline Stabilisation Features at Viking and Victoria Ends

Stabilisation Features	Total Number	Option	Disposal Route
Concrete mattresses	150	<ul style="list-style-type: none"> ▪ 45 for full recovery (at approach to Viking Valve Skid) ▪ 45 to be decommissioned in situ as ongoing protective covering at AR pipeline crossing ▪ 15 to be decommissioned in situ (at Victoria end)* ▪ 45 for full recovery (at Victoria end) 	Recover to vessel and transport ashore for disposal or decommission in situ for remediation/ ongoing protective cover
Grout bags	0		
Framework	0		
FronD Mats*	0		
Rock Dump**	0		

* 2021 survey results at Victoria show that where 15 concrete mattresses have been installed over the umbilical prior to its departure towards Viking (Figure 1.3), the umbilical is buried at full trench depth with substantial sediment cover (approximately 1 m) established above the mattresses. Further dredging and removal works would incur additional disturbance to the seabed.

**FronD mats are located at the Victoria WHPS (see Table 3.1).

***NEO will not be using rock cover as remediation for pipeline or umbilical exposures now or in the future. As outlined in the supporting EA document, the results of the 2021 survey (Appendix 4) show that, with just a few noted exceptions at two sandwave locations, the trenched pipeline and umbilical have adequate depth of cover to offer protection to and from fishing gear interaction and this is expected to remain the case, even when sand wave movement is taken into account. Thus, with the plan being to remove those currently “at risk” pipeline and umbilical sections within the aforementioned sandwaves, there is no requirement to employ any other remediation measures.

3.6 Well

Table 3.5: Well Plug & Abandonment

<p>The production well, as listed in Section 2.4 (Table 2.5), will be plugged and abandoned in accordance with Oil and Gas UK Guidelines for the suspension and abandonment of wells and meet OGA and HSE requirements. NEO intends to undertake the well P&A works as part of a multi-well campaign through Fraser Well Management. This campaign will include the removal of the wellhead and the integrated WHPS to the jack-up rig. An environmental permit through the Portal Environmental Tracking System (PETS) and a Marine Licence application will be submitted in support of any such work that is to be carried out.</p> <p>NEO will provide OPRED with an update on progress of the Well P&A preparatory and execution activities at the end of Q1 2022 and at the end of every quarter thereafter until well P&A has been completed. The well P&A is scheduled to commence and complete in August 2022 subject to vessel and rig availability for 2022. In the event that there is no vessel availability to execute the scope in 2022, the work will be rescheduled to 2023.</p>			
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3.7 Drill Cuttings

Table 3.6: Drill Cuttings Decommissioning Options

How many drill cuttings piles are present?				0			
Tick options examined:							
<input type="checkbox"/>	Remove and re-inject	<input type="checkbox"/>	Leave in place	<input type="checkbox"/>	Cover		
<input type="checkbox"/>	Relocate on seabed	<input type="checkbox"/>	Remove and treat onshore	<input type="checkbox"/>	Remove and treat offshore		
<input type="checkbox"/>	Other						
Recent environmental surveys and chemical sampling of the area has not identified any cuttings, cuttings pile or sediment contamination. This is a result of the strong tidal currents and shifting seabed in the study area							

3.8 Waste Streams

Table 3.7 Waste Stream Management Methods

Waste Stream	Removal & Disposal Method
Bulk Liquids	n/a
Marine Growth	Any marine growth on Valve Skid will be removed onshore at the decommissioning/ recycling facility
NORM/LSA Scale	n/a
Asbestos	n/a
Other Hazardous Wastes	n/a
Onshore Dismantling Sites	An appropriate licensed site will be selected. Facility chosen by NEO must demonstrate disposal track record and waste stream management throughout the deconstruction process and demonstrate their ability to deliver innovative recycling options

Table 3.8 Inventory and Planned Disposition

	Total Inventory (tonnes)	Planned Tonnage to Shore	Planned left <i>in situ</i> (tonnes)
Installations	102	102	0
Pipeline	199	33	166
Umbilical	71	9	62
Concrete Mattresses	600	360	240
FronD Mats	52	52	0
Grout bags	6	6**	0
TOTAL	1,030	562	468

*Grout bags will be removed where feasible to do so

It is expected that the steel from the subsea installations (wellhead, WHPS and valve skid) will be recycled as will be the pipeline ends and spools. This would account for approximately 97% of the steel brought to shore. Recycling of the umbilical will be difficult, and it is likely to go to landfill. However, NEO will continue to engage with other companies and wider industries to discuss reuse or recycling opportunities. The final disposal solution for the concrete mattresses is unknown at this time, since NEO is in discussion with waste contractors for reuse and/or recycling of the mattresses and/or concrete. If no reuse can be identified, the mattresses will go to landfill.

4 Environmental Appraisal Overview

4.1 Environmental Sensitivities (Summary)

The Victoria subsea infrastructure to be decommissioned is located within Block 49/17, Quadrant 49 in the UK sector of the southern North Sea. Water depth along the pipeline route varies from a minimum 21 m to a maximum 27 m LAT. Information in Table 4.1 is taken from the Victoria Decommissioning Programme Environmental Appraisal (NEO-VC-OP-PLN-0002).

Table 4.1: Environmental Sensitivities

Environmental Receptor	Main Features
Conservation interests	<p>The Victoria Field is located in the North Norfolk Sandbanks and Saturn Reef SAC and the Southern North Sea SAC. The North Norfolk Sandbanks & Saturn Reef is designated for:</p> <ul style="list-style-type: none"> ▪ Sandbanks, which are slightly covered by seawater all the time and typically have fields of sand waves associated with them; and ▪ Annex I biogenic reef habitats formed by the polychaete worm (<i>Sabellaria spinulosa</i>) are also present <p>The Southern North Sea SAC is designated for the harbour porpoise (<i>Phocena phocena</i>) an Annex II species</p>
Seabed	<p>The infrastructure lies in an area of the SNS where sediment comprises fine to coarse sands, often silty and with variable amounts of shell fragments and occasional pebbles and cobbles. The highly dynamic marine environment restricts the silt and clay content. The sediments in Block 49/17 are classified as very poorly to moderately well sorted, fine sand to fine gravel with low content of silt/ clay and organic matter Levels of clay and organic matter around Viking AR were low, 0.3% and 0.5%, respectively</p>
Benthic fauna	<p>The fauna can be described as typical for fine sand and muddy sand sediments of the southern North Sea, and may include communities consisting of polychaetes, mobile amphipods, echinoderms, molluscs and crustaceans. Species such as sandeel and plaice may also be present in these assemblages</p>
Fish	<p>There are spawning areas for cod, mackerel, lemon sole, Nephrops, plaice, sandeels, sole, sprat and whiting within ICES rectangle 35F2. There are potential nursery areas in the ICES rectangle for cod, herring, lemon sole, mackerel, Nephrops, horse mackerel, plaice, sandeel, sprat, tope shark and whiting within ICES rectangle 35F2. A high probability of age 0 (juveniles) horse mackerel has been reported within Block 49/17. This is considered as a high intensity nursery area for these species</p>
Fisheries	<p>Catch composition by weight of landings from United Kingdom and foreign vessels in ICES rectangle 35F2 for 2019 was dominated by demersal species. Between 2015 and 2019, the annual total live weight of fish landed from ICES rectangle 35F2 ranged from a maximum of 1,102.88 tonnes in 2017 to a low of 10.13 tonnes in 2018; these catches had a value of £2,169,216 and £20,091 respectively. Fishing methods include beam trawls and bottom trawls</p>
Marine Mammals	<p>Minke whale, long-finned pilot whale, bottlenose dolphin and harbour porpoise, have been sighted in the decommissioning area, with the most sightings occurring in the summer months. However, only white-beaked dolphins and harbour porpoise have been sighted within Quadrant 49. Grey and harbour seals can be potentially found in both block of interest, although in very low density</p>
Birds	<p>The most common species of seabird found in the study area include: Fulmar, Gannet, Guillemot, Kittiwake, Razorbill, Puffin, Little Auk; as well as several species of gull, tern, and skua. Very high seabird sensitivity to surface pollution has been recorded in July and low in August and September in Block 49/17. Data for the remaining months have been interpolated from neighbouring months or surrounding blocks and vary between low and extremely high sensitivity (in winter months). No data are available for January, April, May and November</p>

Environmental Receptor	Main Features
Other Users of the Sea	<ul style="list-style-type: none"> ▪ Overall shipping density in the vicinity of the Victoria subsea infrastructure is considered very low. ▪ Oil & Gas structures in the vicinity of the pipelines include 7 wells and 22 pipelines are located within 100 m radius from the Victoria subsea infrastructure. ▪ There are five known areas of windfarm development within 50 km of the Victoria subsea infrastructure. Three of these developments are in the pre-planning stages and two are operational. ▪ The closest aggregate production areas are the Humber 3 and Humber 5, located approximately 21 km northwest and 19 km north, respectively, of the Victoria subsea infrastructure. ▪ There is no known military activity expected within 50 km of the Victoria subsea infrastructure. ▪ There are four dangerous wrecks within the Block 49/17, located between 920 m and 7.1 km from the Victoria infrastructure. ▪ The Tampnet telecommunication cable is located within Block 49/17, 2.6 km to the west of the Victoria subsea infrastructure
Onshore Communities	<p>Whilst the decommissioning yard is yet to be selected, NEO procedures require approved facilities; including site visits, review of permits and consideration of how facility construction and design has been developed to minimise impact. All onshore yards at which decommissioned material will be handled will already deal with potential environmental issues and community relations as part of their existing site management plans</p>
Atmosphere	<p>Atmospheric emissions generated from vessels can contribute to local air quality issues. Emissions to air can also act cumulatively with those from other activities (such as onshore power generation and use of vehicles) to contribute to global climate change. These emissions may come from vessel use but also through linked activities such as the recycling of materials brought onshore</p> <p>NEO is committed to Net Zero and the OGA Stewardship Expectation 11. NEO's Strategy to reduce emissions is intended to drive increased energy efficiencies and reduced emissions. NEO plans several improvements under our Strategy including working with our supply chain, collating emission/energy savings initiatives across the business and reviewing emissions sources.</p>

4.2 Potential Environmental Impacts & Management

4.2.1 Environmental Impact Assessment Summary

Appraisal of the interactions between the proposed Victoria Field decommissioning activities and the local environment, an assessment of all potentially significant environmental and socioeconomic impacts, and key environmental concerns raised by stakeholders identified the potential for significant impacts from seabed disturbance, discharges to sea, accidental events, underwater noise during decommissioning activities, societal concerns and impacts to conservation sites.

The Victoria subsea infrastructure is located in a relatively sensitive area of the southern North Sea:

- All four Annex II species (harbour porpoise, bottlenose dolphin, grey seals and harbour seals) known to occur in UK offshore waters have been sighted within Quadrant 49 and the surrounding quadrants of the Victoria Field; and
- The installation is located within the North Norfolk Sandbank and Saturn Reef SAC and Southern North Sea SAC, which are designated for the protection of Annex I habitats (sandbanks which are slightly covered by sea water all of the time and biogenic reefs formed by cold water corals) and Annex II species (harbour porpoise), respectively.

Mitigation to avoid and/or reduce the environmental concerns will be in-line with industry best practice. NEO has an established Environmental Management System (EMS), which will ensure that proposed mitigation measures are implemented and monitored to ensure no significant environmental or socioeconomic impacts.

Overall, the EA evaluated the potential impacts and environmental risk reduction measures and concluded that NEO have, or intend to, put in place sufficient safeguards to mitigate the environmental and societal risk and to monitor the implementation of these measures, a programme of which will be agreed with OPRED. The conclusion of the EA is that the recommended options presented for the decommissioning of the Victoria subsea infrastructure can be completed without causing significant adverse impact to the environment.

Table 4.2: Environmental Impact Management

Activity	Main impacts	Management
Removal of Subsea Installations	<ul style="list-style-type: none"> ▪ Impacts to the seabed will occur from: dredging/trenching operations to excavate pipeline at ends and rebury; cutting and extraction operations of underwater piles and wellhead 3 m below seabed; recovery of subsea materials, such as mattress, spools, trees, manifolds; placement of jack-up rig spudcans and potential for rock stabilisation; and clear seabed surveys. ▪ Excavating, cutting and lifting of the Victoria subsea infrastructure will create a temporary, short-term disturbance over an estimated area of 0.007 km² ▪ The potential for rock stabilisation will create a longer-term disturbance over an estimated area of 0.0008 km² ▪ Underwater noise will be increased during decommissioning mainly due to the presence of vessels. Located in the harbour porpoise protection area underwater noise is considered due to stakeholders' concerns. ▪ All offshore activities carry the potential risk of an oil spill to the marine environment. Though the likelihood of a diesel spill occurring from operations at the Victoria decommissioning area is very low, diesel release from a vessel collision and condensate release from the well and the Victoria pipeline was modelled. ▪ NEO is aware that a number of oil and gas fields/ installations in the southern North Sea are currently being decommissioned or are reaching the end of their operational life. As a consequence, the potential for additive or cumulative impacts within the southern North Sea will be increased in the short-term 	<ul style="list-style-type: none"> ▪ Cutting and lifting operations will be controlled by diver and/or ROV to ensure accurate placement of cutting and lifting equipment to minimise any impact on seabed sediment. ▪ If required, any gravel material used as scour protection for jack-up rig placement will be laid as flat as possible to encourage burial following the removal of the spudcans. ▪ Prior to commencement of operations, the appropriate notifications will be made and maritime notices posted. Appropriate navigation aids will be used in accordance with the consent to locate conditions to ensure other users of the sea are made aware of the presence of vessels ▪ Underwater noise will be transient and is not expected to have a significant or cumulative impact, as the sound level and area of influence are expected to be below any significant threshold. ▪ The Victoria subsea well OPEP will provide the direction to effectively manage the spill in case of an accidental event. In the event of an accidental spill to sea, vessels will implement their Shipboard Oil Pollution Emergency Plan. ▪ Post-decommissioning seabed clearance will be undertaken
Decommissioning of Pipeline and Umbilical	<ul style="list-style-type: none"> ▪ Flushing of the pipeline will introduce some minor hydrocarbon contaminants to the sediment and water column, but these are expected to be quickly dispersed given the active hydrodynamics in the region and sequestered in the sediment. Long-term degradation of the pipeline and umbilical will introduce residual chemicals to the sediment and water column over an extended period. ▪ There will be a slow release of contaminants to the seabed from the pipeline and umbilical decommissioned <i>in situ</i> as they degrade over time. The main source of the long-term contamination would be the degradation products of the steel pipeline and anodes. ▪ The long-term cumulative effects have also been considered, to account for the degradation and eventual collapse of the pipelines decommissioned <i>in situ</i>. It is not thought that these will lead to a significant cumulative impact, as release rates will be over a long period (several decades to centuries), of small volumes or amounts, and potentially locked within the surrounding sediments if the pipelines remain buried over time. ▪ The decommissioning of the pipeline and umbilical <i>in situ</i> is unlikely to have a significant impact on other sea users (i.e. fishing) due to a relatively short length of the pipeline and umbilical remaining <i>in situ</i>. 	<ul style="list-style-type: none"> ▪ Due to the sensitive environmental setting, presence within the North Norfolk Sandbanks and Saturn Reef SAC, a non- invasive, method of debris clearance along the pipeline corridor will be used. ▪ On-going consultation with fisheries representatives. ▪ Post-decommissioning seabed clearance. ▪ Clear seabed survey assessment of pipeline crossing during decommissioning and periodically thereafter. ▪ Post-decommissioning surveys as agreed with Regulator. ▪ On-going post decommissioning monitoring of the infrastructure decommissioned <i>in situ</i>, the frequency and nature of which will be agreed with OPRED. ▪ Removal of midline pipeline and umbilical sections to mitigate current or future snagging hazards as sandwaves migrate. ▪ Remedial intervention in the event issues arise from pipeline exposure or interaction with other users
Decommissioning Stabilisation Features	<ul style="list-style-type: none"> ▪ Disturbance to the seabed ▪ Impacts on other users 	<ul style="list-style-type: none"> ▪ Post-decommissioning surveys will be undertaken to ensure that the seabed has been left in a condition that does not present a hazard to fishers. ▪ Any stabilisation materials left <i>in situ</i> will not present a hazard to commercial fishing. Admiralty Charts and FishSafe will also be updated to identify any infrastructure remaining <i>in situ</i>

5 Interested Party Consultations

5.1 Consultation Summary

Table 5.1: Summary of Stakeholder Engagement Comments

Who	Comment	Response
Informal Stakeholder Consultations		
Centre for Environment, Fisheries and Aquaculture Science (CEAFS)	Letter sent in December 2017 soliciting comments and questions, informing the organisation of the proposed decommissioning project and an overview of the field and decommissioning programme	No response
Joint Nature Conservation Committee (JNCC)		No response
Ministry of Defence (MOD)		No response
Marine Management Organisation (MMO)		No response
Statutory Consultations		
	Letter sent in December 2017 soliciting comments and questions, informing the organisation of the proposed decommissioning project and an overview of the field and decommissioning programme	No response
National Federation of Fishermen's Organisation (NFFO)	<p>Teleconference held on 26 April 2018 with NFFO. Their concerns are with future risk to beam trawlers from pipeline and crossing left in situ.</p> <p>NEO should demonstrate that these areas do not pose a risk to fishing vessels.</p> <p>NFFO expects that these areas will be periodically surveyed</p>	NEO will ensure that any infrastructure left in situ doesn't pose a snag hazard to other sea users. Appropriate monitoring will be set in place as well as Notices to Mariners
	Formal consultation	
Scottish Fishermen's Federation (SFF)	Formal consultation	Representation via NFFO:
Northern Ireland Fish Producers Organisation		No response
Global Marine Systems	Formal consultation	No response
Public	Formal consultation	No response

6 Programme Management

6.1 Project Management & Verification

NEO Energy has set up a decommissioning team utilising its own personnel supported by specialist decommissioning personnel. This UK Decommissioning organisation has responsibility to plan and execute decommissioning projects. Figure 6.1 provides the anticipated decommissioning schedule.

NEO Energy existing processes for Operations, Planning, Project Management, Procurement, and Health Safety and Environment, will be used and tailored to meet the specific requirements of each decommissioning programme. NEO Energy will manage all permitting, licences, authorisations, notices, consents and consultations.

Any changes to this decommissioning document will be discussed and agreed with OPRED in advance.

6.2 Post-Decommissioning Debris Clearance & Verification

A post decommissioning site survey will be carried out around a 500m radius of installation sites and a 100m corridor along each existing pipeline route (50m either side). Any seabed debris related to offshore oil and gas activities will be recovered for onshore disposal or recycling in line with existing disposal methods.

Clear seabed verification will be undertaken, the methods to be used will be discussed and agreed with OPRED and will be appropriate to the sensitive environmental setting (for example visual and non-intrusive survey methods wherever possible). This will be followed by a statement of clearance to all relevant governmental departments and non-governmental organisations.

Proposed methods/ approach for post-decommissioning surveys will be discussed and agreed with OPRED.

6.3 Schedule

Victoria Decommissioning Project – Schedule Options 2022 / 2023

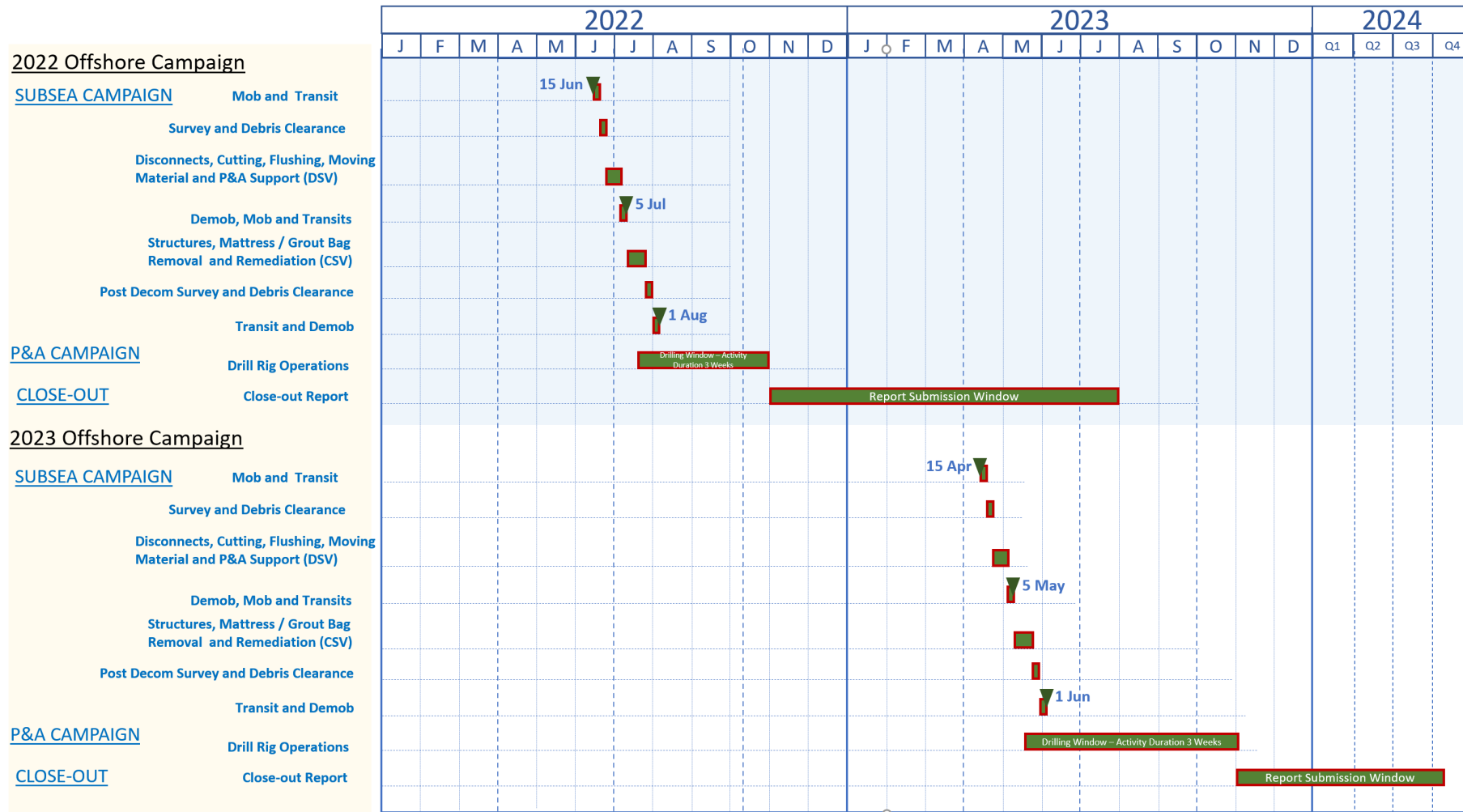


Figure 6.1: Anticipated Decommissioning Schedule.

Note: The above dates are provisional and the 2022 schedule is subject to vessel availability. In the event that there is no vessel availability to execute the scope in 2022, the work will be rescheduled to 2023 with the close-out report submission expected by the end of Q4 2023.

6.4 Costs

Table 6.1: Provisional Decommissioning Programmes Costs

Item	Estimated Cost (£m)* ¹
Project management	Provided to OPRED
Project management for permits and consents	Provided to OPRED
Flushing of lines and survey	Provided to OPRED
Subsea infrastructure removal and disposal	Provided to OPRED
Well P and A	Provided to OPRED
Total	Provided to OPRED

*¹ Costs for the listed work scopes have been provide to OPRED but removed from the table as they are commercially sensitive.

6.5 Close-out

In accordance with the OPRED Guidelines, a close out report will be submitted to OPRED within one year of the completion of the offshore decommissioning scope. The report will include final disposition of the decommissioned infrastructure, debris removal and verification of seabed clearance, and the first post-decommissioning environmental survey. It will detail the outcomes of the surveys as well as explain any major variances from the programmes.

6.6 Post-Decommissioning Monitoring & Evaluation

A post-decommissioning environmental seabed survey and sampling, around sites of the installations and along the pipeline route will be carried out. The survey will focus on the areas of physical disturbance from the decommissioning scope of work and any potential risk to other users of the sea. In order to avoid further disturbance to the seabed, non-intrusive survey methods will be employed.

Verification of seabed state will be obtained. It is recognised that the decommissioning activities are occurring in the North Norfolk Sandbanks and Saturn Reef and Southern North Sea SACs, therefore different methods of determining debris clearance and snag risk may be required. The methods used will therefore be discussed and finalised with OPRED.

The infrastructure is currently shown on Admiralty Charts and the FishSafe system. Once decommissioning activities are complete, updated information on the Victoria infrastructure which remains *in situ* and which has been removed, will be made available to allow the Admiralty Charts and the FishSafe system to be updated.

The infrastructure to remain *in situ* is fully trenched and buried and will be confirmed as such during decommissioning. Should future surveys find evidence of any exposures, spans or interactions that exceed the FishSafe criteria, these will be submitted for inclusion within the FishSafe database and remedial action would be undertaken. Any remedial action will be agreed with OPRED.

The frequency of required monitoring will be agreed with OPRED and future monitoring will be determined through a risk-based approach, based on the findings from each subsequent survey. During the period over which monitoring is required, the status of the infrastructure decommissioned *in situ* would be reviewed and any necessary remedial action undertaken to ensure it does not pose a risk to other sea users.

7 Supporting documents

Table 7.1 Supporting documents

Title	Document number
Victoria Field: Environmental Appraisal	NEO-VC-OP-PLN-0002
Victoria Field: Comparative Assessment	NEO-VC-OP-PLN-0003

8 Partners Letters of Support

DocuSign Envelope ID: D9AC7100-8457-4F2B-B7A6-55F836C12B77



Britoil Limited
1 Wellheads Avenue
Dyce
Aberdeen
AB21 7PB

Offshore Petroleum Regulator for Environment and Decommissioning
Department for Business, Energy & Industrial Strategy
3rd Floor, Wing C
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

Date: 6th April 2022

Dear Sir or Madam,

Victoria Field Decommissioning Programmes Petroleum Act 1998

We, Britoil Limited, have no current ownership or equity interest in Victoria Field but acknowledge that we remain in receipt of a notice under section 29 of the Petroleum Act 1998 ("Section 29 Notice") which may be relevant to certain facilities located at the Victoria Field.

In such capacity and in so far as relevant to such facilities, we confirm that we have no objection to NEO Energy submitting abandonment programmes relating to the Victoria Field.

Yours faithfully,

DocuSigned by:

081DCA3436C71463

Mathew Duncan
North Sea Decommissioning Advisor

BP Exploration Operating Company Limited, Company No. 00305943
Registered Office: Chertsey Road, Sunbury On Thames, Middlesex, TW16 7BP



Offshore Petroleum Regulator for Environment and Decommissioning
Department for Business, Energy & Industrial Strategy
3rd Floor, Wing C
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

13th April 2022

Dear Sir or Madam

VICTORIA FIELD DECOMMISSIONING PROGRAMMES PETROLEUM ACT 1998

We acknowledge receipt of your letter dated 15 March 2022.

We, Chrysaor Production (U.K.) Limited confirm that we authorise Neo Energy (SNS) Limited to submit on our behalf abandonment programmes relating to the Victoria Field (Installations and Pipelines) as directed by the Secretary of State on the 15th March 2022.

We confirm that we support the proposals detailed in the Victoria Field (Installation and Pipelines) Decommissioning Programmes dated 15th March 2022, which is to be submitted by Neo Energy (SNS) Limited in so far as they relate to those facilities and pipelines in respect of which we are required to submit an abandonment programme under section 29 of the Petroleum Act 1998.

Yours faithfully

Richard Tocher
SVP Decommissioning & Major Projects

For and on behalf of Chrysaor Production (U.K.) Limited

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Offshore Petroleum Regulator for Environment and Decommissioning
Department for Business, Energy & Industrial Strategy
3rd Floor, Wing C
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

14th April 2022

Dear Sir or Madam

VICTORIA FIELD DECOMMISSIONING PROGRAMMES PETROLEUM ACT 1998

We acknowledge receipt of your letter dated 15 March 2022.

We, NEO Energy Upstream UK Limited confirm that we authorise Neo Energy (SNS) Limited to submit on our behalf abandonment programmes relating to the Victoria Field (Installations and Pipelines) as directed by the Secretary of State on the 15th March 2022.

We confirm that we support the proposals detailed in the Victoria Field (Installation and Pipelines) Decommissioning Programmes dated 15th March 2022, which is to be submitted by Neo Energy (SNS) Limited in so far as they relate to those facilities and pipelines in respect of which we are required to submit an abandonment programme under section 29 of the Petroleum Act 1998.

Yours faithfully

DocuSigned by:
Andrew Barker
25074604677407

Andrew Barker
Development Manger

For and on behalf of NEO Energy Upstream UK Limited

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30 St Mary Axe
London EC3A 8BF

9th Floor, The Silver Fin Building
455 Union Street
Aberdeen AB11 8DB

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info@neweuropeanoffshore.com
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NEO Energy Upstream UK Limited is a company registered in Scotland under company number SC219888
Registered Office: The Silver Fin Building (9th Floor), 455 Union Street, Aberdeen, United Kingdom, AB11 8DB

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Offshore Petroleum Regulator for Environment and Decommissioning
Department for Business, Energy & Industrial Strategy
3rd Floor, Wing C
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

14th April 2022

Dear Sir or Madam

VICTORIA FIELD DECOMMISSIONING PROGRAMMES PETROLEUM ACT 1998

We acknowledge receipt of your letter dated 15 March 2022.

We, NEO Energy (CNS) Limited confirm that we authorize Neo Energy (SNS) Limited to submit on our behalf abandonment programmes relating to the Victoria Field (Installations and Pipelines) as directed by the Secretary of State on the 15th March 2022.

We confirm that we support the proposals detailed in the Victoria Field (Installation and Pipelines) Decommissioning Programmes dated 15th March 2022, which is to be submitted by Neo Energy (SNS) Limited in so far as they relate to those facilities and pipelines in respect of which we are required to submit an abandonment programme under section 29 of the Petroleum Act 1998.

Yours faithfully

DocuSigned by:
Andrew Barker
550F4608A877AC7

Andrew Barker
Development Manger

For and on behalf of NEO Energy (CNS) Limited

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NEO Energy (CNS) Limited is a company registered in Scotland under company number SC309065
Registered Office: The Silver Fin Building (9th Floor), 455 Union Street, Aberdeen, United Kingdom, AB11 6DB

Appendix 1: Public Notice

At commencement of consultation, public notices were placed in the Telegraph and the Eastern Daily Press. The example from the Telegraph is presented here. The information presented was to the best of NEO's understanding at the time of publication.

PUBLIC NOTICE

The Petroleum Act 1998

VICTORIA FIELD DECOMMISSIONING PROGRAMMES

NEO Energy (SNS) Limited (SC 291165) has submitted, for the consideration of the Secretary of State for Business, Energy and Industrial Strategy, draft Decommissioning Programmes for the subsea installations, pipeline and umbilical associated with the Victoria Field, located in the southern North Sea (49/17a), in accordance with the provisions of the Petroleum Act 1998. It is a requirement of the Act that interested parties be consulted on such decommissioning proposals.

The Victoria Field is located in the southern North Sea (49/17a) in a water depth varying between 21m and 27m Lowest Astronomical Tide (LAT). The items/facilities covered by the Decommissioning Programmes are:

- * Victoria Field Installations, comprising a horizontal subsea Xmas tree, wellhead and wellhead protective structure (WHPS) and a valve skid
- * Victoria Pipeline and Umbilical, comprising 3.8 km of six-inch steel pipeline and a 3.95 km umbilical, along with associated spools and jumpers. The pipeline and umbilical are protected by 153 concrete mattresses

NEO Energy hereby gives notice that a summary of the Victoria Field Decommissioning Programmes can be viewed and downloaded at: www.neweuropeanoffshore.com

Alternatively, a hard copy of the Decommissioning Programmes can be inspected at the following location during office hours:

NEO Energy, 9th Floor, The Silver Fin Building, 455 Union Street, Aberdeen, AB11 6DB. Contact: Lynne MacPherson, Assets & Operations Manager
Email: decommissioning@neweuropeanoffshore.com

Representations regarding the Victoria Field Decommissioning Programme should be submitted in writing or electronically to the following contact, where they should be received by 29 January 2021 and should state the grounds upon which any representations are being made.

Lynne MacPherson, Assets & Operations Manager, NEO Energy,
9th Floor, The Silver Fin Building, 455 Union Street, Aberdeen, AB11 6DB.
Email: decommissioning@neweuropeanoffshore.com

Appendix 2: Statutory Consultee Correspondence

NEO received no written correspondence from consultees (or the public) beyond what has already been presented to OPRED.

Appendix 3: Victoria Pipeline Crossing

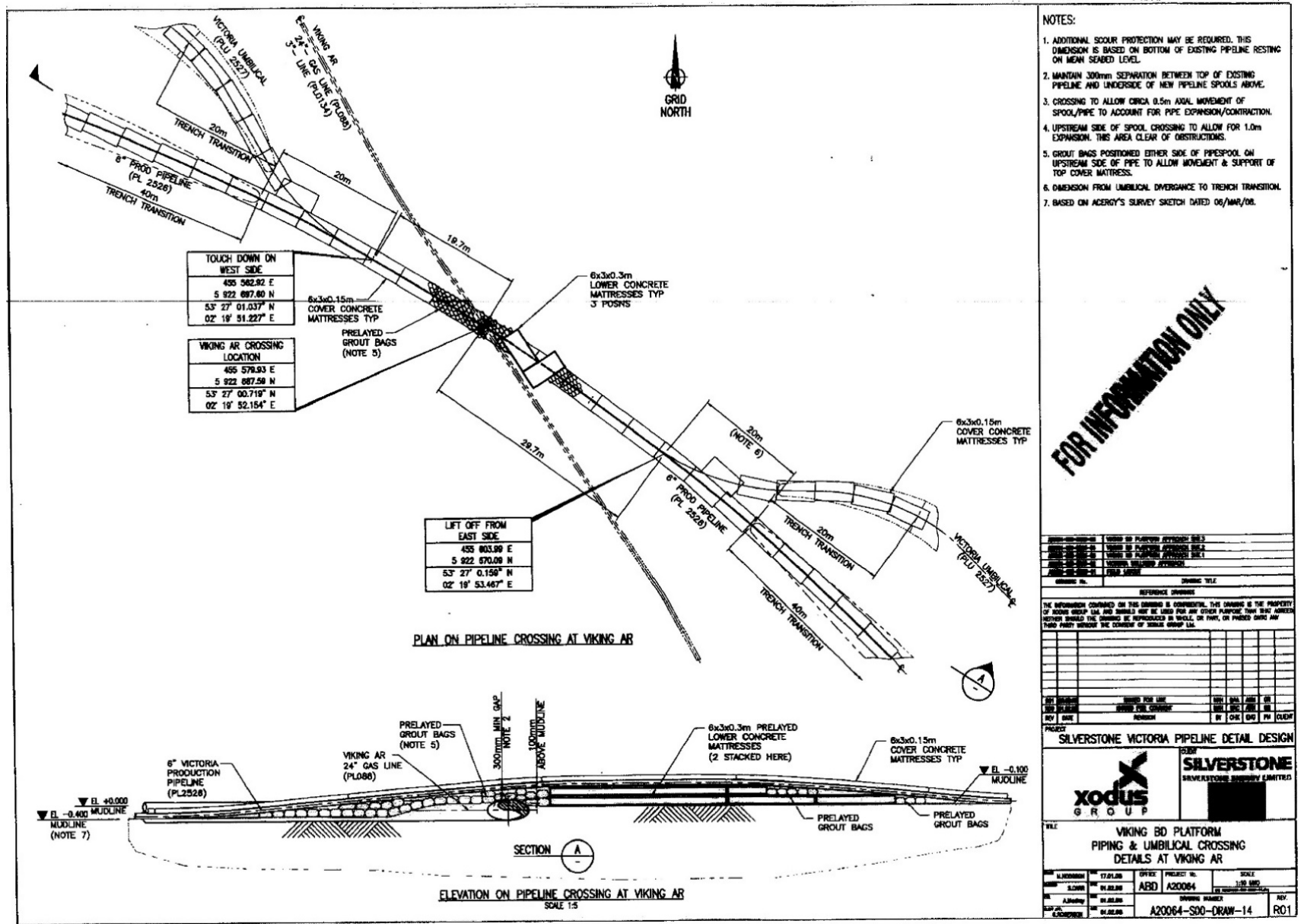


Figure A3.1 Victoria Pipeline Crossing of Viking AR Pipelines (PL88 and PL134)

Appendix 4: Depth of Burial Information

Pipeline (PL2526) burial

Results of the survey carried out by Fugro in April 2021 shows that, outwith the tie-in spools, trench transitions and the AR pipeline crossing, the Victoria pipeline remains mostly buried throughout its length with cover depths generally exceeding 1.4m, as illustrated within Table A4.1.

Table A4.1 Pipeline Burial Depth

KP	Easting	Northing	DOC	DOL
0.045	452610.67	5924055.72	0.78	0.79
0.055	452616.77	5924047.80	1.21	1.33
0.100	452644.41	5924012.29	1.53	1.50
0.250	452736.04	5923893.53	1.71	1.63
0.500	452891.62	5923697.92	0.97	0.95
0.750	453071.41	5923524.47	1.63	1.60
1.000	453269.52	5923372.15	1.25	1.07
1.250	453486.75	5923248.64	1.48	1.45
1.500	453714.41	5923145.41	1.44	1.41
1.750	453941.08	5923040.03	1.53	1.47
2.000	454169.99	5922939.76	1.50	1.40
2.250	454399.08	5922839.57	0.85	0.77
2.500	454639.41	5922771.05	1.50	1.37
2.750	454887.71	5922744.95	1.23	1.19
3.000	455137.68	5922746.34	1.72	1.66
3.250	455387.62	5922742.29	1.19	1.24
3.500	455616.86	5922647.72	0.67	0.49
3.700	455726.18	5922494.01	0.92	1.05

The recent 2021 burial status survey confirmed that six distinct sand waves are present along the pipeline route that are seen to have migrated westwards, with greater movement being noted for the two most easterly wave profiles, sandwaves 5 and 6. Depth of Cover (DOC) analysis of PL2526 has shown that the vast majority of the pipeline length has continued to remain buried between years 2008 and 2021 with the latest survey showing just three trenched sections that have little or no soil cover:

- A 20m pipeline section between KP 2.630 and KP 2.650 coincident with sand wave 5. However, MBES data shows that DOC still remains > 0.49m over this relatively short section.
- A 55m pipeline section between KP 3.075 and KP 3.130 coincident with sand wave 6. Unfortunately, MBES data shows that DOC is generally less than 0.2m over this section. Video evidence also confirms the existence of a circa 19m exposed section between KP 3.097 and KP 3.116. These exposures can be attributed to the migration of the sand wave approximately 70 m to the west over the 13 years since installation in 2008.
- A 105m pipeline section between KP 3.275 and KP 3.380 occurring just prior to the start of the trench transition at the AR crossing location. With the exception of an exposed section, the MBES data shows DOC between 0.44 & 0.14m. Video evidence also confirms the existence of a circa 10m exposed section (top of pipe only) between KP 3.367 and KP 3.377.

Umbilical (PL2527) burial

Outwith the immediate approaches to the valve skids, the trench transitions and the AR pipeline crossing, the Victoria umbilical remains mostly buried throughout its length with cover depths typically exceeding 1.3m, as illustrated in Table A4.2.

Table A4.2 Umbilical burial depth

KP	Easting	Northing	DOC (m)	DOL (m)
0.100	452599.39	5924100.18	0.16	0.39
0.135	452621.91	5924073.68	0.75	0.70
0.250	452691.48	5923982.17	1.40	1.26
0.500	452843.10	5923783.47	1.30	1.27
0.750	453014.96	5923604.95	1.59	1.56
1.000	453206.33	5923444.53	1.67	1.62
1.250	453414.96	5923307.42	1.69	1.68
1.500	453639.28	5923196.91	1.55	1.52
1.750	453866.72	5923093.23	1.61	1.57
2.000	454097.42	5922997.15	1.59	1.47
2.250	454324.85	5922893.29	1.42	1.48
2.500	454559.54	5922808.44	1.75	1.76
2.750	454806.20	5922769.53	0.90	0.84
3.000	455056.08	5922765.30	1.38	1.36
3.250	455305.99	5922763.06	1.34	1.22
3.500	455543.61	5922718.60	0.66	0.64
3.750	455722.43	5922557.31	1.30	1.27
3.800	455744.10	5922512.27	1.25	1.22
3.825	455746.91	5922487.79	0.75	0.82

Similar to the pipeline, the DOC assessment has also shown that the umbilical has continued to remain substantially buried between years 2008 and 2021 with the latest survey showing just two sections outwith the matted AR crossing location having a soil cover less than 0.6m:

- A 10m umbilical section between KP 2.725 and KP 2.735 coincident with sand wave 5. However, MBES data from the 2021 survey shows that DOC still remains > 0.44m over this short section.
- A 50m umbilical section between KP 3.170 and KP 3.220 coincident with sand wave 6. Although there is no actual exposure of the umbilical, MBES data shows that, in this instance, the DOC is generally less than 0.3m over this section. Such diminished values are again thought to have been caused by migration of the sand wave post installation.

Remediation activity

The results of the 2021 survey show that significant loss of cover has only occurred in relation to sand waves 5 & 6 and that the pipeline continues to remain buried with reasonable soil cover at the remaining four sand wave locations. Any future exposure at these four locations will be identified during planned inspection activities and remediation will be removal or reburial to > 0.6 m depth. It is noted that migration of sand waves 5 & 6 has already resulted in some minor "crown of pipe" exposure with further uncovering predicted to occur over time. To mitigate against the above risk of further exposure it is therefore the intent that approximately 240 m of pipeline and umbilical be cut and removed from within sand waves 5 and 6 as part of the 2022 decommissioning campaign. Further information on the expected migration of these sandwaves and the action being taken to prevent any future exposure is available in the supporting EA document.