



WALDORF
PRODUCTION

Helvellyn Decommissioning Programmes

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Document Control

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Terms and Abbreviations

Abbreviation	Explanation
A2D	Amethyst A2D Platform
CA	Comparative Assessment
SCAP	Supply Chain Action Plan
COP	Cessation of Production
DCR	Design and Construction Regulations
DESNZ	Department for Energy Security & Net Zero
DGT	Dimlington Gas Terminal
DP	Decommissioning Programmes
EA	Environmental Appraisal
ESDV	Emergency Shut Down Valve
HDPE	High Density Poly Ethylene
HSE	Health and Safety Executive
ICES	International Council for the Exploration of the Sea
JNCC	Joint Nature Conservation Committee
KM	Kilometre
LSA	Low Specific Activity
M	Metres
M ²	Meters Squared
M ³	Meters Cubed
MAT	Master Application Template
MCZ	Marine Conservation Zone
N/A	Not Applicable
NFFO	National Federation of Fishermen's Organisations
NORM	Naturally Occurring Radioactive Material
NSTA	North Sea Transition Authority
OEUK	Offshore Energies United Kingdom
OPRED	Offshore Petroleum Regulator for Environment & Decommissioning
OSPAR	Oslo and Paris Convention
P & A	Plug and Abandonment
PL	Pipeline
PUK	Perenco (UK) Limited
PWA	Pipeline Works Authorisation

SAT	Subsidiary Application Template
SNS	Southern North Sea
SPA	Special Protection Area
Te	Tonne
THC	Total Hydrocarbon Content
UKCS	UK Continental Shelf
WHPS	Wellhead Protection Structure
WONS	Well Operation Notification System
WPRL	Waldorf Petroleum Resources Limited
Xmas tree	Term used to describe the body and valve structure used to control the flow of gas from a well
“	Inch, 25.4millimetres

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1. EXECUTIVE SUMMARY

1.1 Combined Decommissioning Programmes

This document contains two decommissioning programmes for each set of associated notices served under section 29 of the Petroleum Act 1998.

The decommissioning programmes are for:

- Helvellyn subsea installation
- Helvellyn pipeline PL1956 from and including Helvellyn Wellhead Protection Structure to and not including Amethyst A2D Riser Flange. Helvellyn umbilical PLU1957 from and not including A2D J-Tube bellmouth to and including Helvellyn Subsea Wellhead Stab Plate. The PUK owned A2D riser sections of the pipeline and umbilical will be decommissioned under a separate decommissioning programme for the A2D jacket.

1.2 Requirement for Decommissioning Programmes

Subsea Installation:

In accordance with the Petroleum Act 1998, the Section 29 notice holders of the Helvellyn subsea installation (see Table 1.2) are applying to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) to obtain approval for decommissioning the installation detailed in Section 2.1 of this programme.

Following public, stakeholder and regulatory consultation, this decommissioning programme is submitted without derogation and in full compliance with Department for Energy Security & Net Zero (DESNZ) guidelines.

Pipeline and Umbilical:

In accordance with the Petroleum Act 1998, the Section 29 notice holders of the Helvellyn pipeline and umbilical (see Table 1.4) are applying to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) to obtain approval for decommissioning the pipeline and umbilical detailed in Section 2.2 of this programme.

In accordance with Regulations 14 and 22(2) of the Pipeline Safety Regulations 1996, notification to the Health and Safety Executive (HSE) of the decommissioning of the pipeline and umbilical and submission of the required variations to the Pipeline Works Authorisation to carry out the flushing and disconnection activities have been made.

1.3 Introduction

The Helvellyn field is in the Southern Basin of the UKCS in licence P001, block 47/10a. Waldorf Petroleum Resources Limited (WPRL) is the Field Operator and Subsea Installation and Pipeline Operator. The Wells Operator will transition from WPRL to Exceed Torridon Limited prior to well decommissioning.

Helvellyn comprises of a single subsea well 47/10-7y, which is completed with a subsea production xmas tree, protected by a Wellhead Protection Structure (WHPS). These are located at a water

depth of 27m, coordinates Latitude 53° 43' 54.18" N / Longitude 0° 50' 31.67" E. This is approximately 48 km east of the Spurn Point on the East Riding of Yorkshire coast / Dimlington Gas Terminal (DGT) and 136 km southwest of the UK / Netherlands median line.

Helvellyn production was exported 15.7km through an 8" pipeline, (PL1956) to the PUK A2D platform, in Block 47/14, where it is comingled with A2D production and further exported 47.7km through the 30" Amethyst Trunkline pipeline, PL649 to the DGT. The Helvellyn well was controlled from the DGT Control Room with control affected via a 2" umbilical, (PLU1957) from A2D which is piggybacked to the export pipeline.

Approximately 97.8% of the route is trenched with the pipeline buried to 1.5-1.8m below the natural surrounding seabed level. Rock dump, concrete mattresses and gravel bags were used to protect pipeline sections laid on the seabed at the A2D platform and Helvellyn WHPS approaches that were not trenched. At the riser to spool goose necks, the pipeline and umbilical are supported with grout bags. In addition, the trench transitions and several locations along the route of the pipeline have been rock dumped in order to provide protection or down force on the pipeline to prevent any upheaval buckling.

The Helvellyn subsea well and approximately 12.5 km of the pipeline route is located within the boundary of the Holderness Offshore Marine Conservation Zone (MCZ) designated for the protection of three broad-scale habitat types. See figure 1.4.

First discovered in 1985, the well was drilled in 2002 and started production in January 2004. Production has since declined, decommissioning of the A2D platform is underway and as such Helvellyn no longer has a connected export route for the production gas and consequently the Helvellyn well shut-in. Remaining reserves are not sufficient to support an alternative export route investment and therefore a Cessation of Production (CoP) notification has been submitted to NSTA.

Following public, stakeholder and regulatory consultation, the decommissioning programmes are submitted without derogation and in full compliance with DESNZ guidelines. The decommissioning programmes explain the principles of the removal activities and are supported by an Environmental Appraisal (EA) and Comparative Assessment (CA).

1.4 Overview of Subsea Installation and Pipeline and Umbilical Being Decommissioned

1.4.1 Subsea Installation

Table 1.1: Subsea Installation Being Decommissioned			
Field	Helvellyn	Production Type	Gas
Water Depth (m)	27	UKCS block	47/10a
Distance to median (km)	136	Distance from nearest UK coastline (km)	48
Subsea Installations	1	Subsea Wells	1 (47/10-7y)

Table 1.2: Subsea Installation Section 29 Notice Holder Details

Section 29 Notice Holder	Registration Number	Equity Interest (%)
Waldorf Petroleum Resources Limited	03949599	100
Alpha Petroleum (UK) Holdings Limited	08774092	0
Waldorf Energy Partners Limited	11957078	0

1.4.2 Pipeline and Umbilical

Table 1.3: Pipeline and Umbilical Being Decommissioned

Number of Pipelines (Details given in Table 2.2)	1
Number of Umbilicals (Details given in Table 2.2)	1

Table 1.4: Pipeline and Umbilical Section 29 Notice Holder Details

Section 29 Notice Holder	Registration Number	Equity Interest (%)
Waldorf Petroleum Resources Limited	03949599	100
Alpha Petroleum (UK) Holdings Limited	08774092	0
Waldorf Energy Partners Limited	11957078	0

1.5 Summary of Proposed Decommissioning Programmes

Table 1.5: Summary of Decommissioning Programmes

Proposed Decommissioning Solution	Reason for Selection
1. Subsea Installation	
<p>Complete removal and re-use or recycle.</p> <p>The WHPS pipework and umbilical have been made hydrocarbon free as part of the pipeline cleaning.</p> <p>The WHPS is not piled or pinned to the seabed and will not require any cutting of legs/piles. It will be removed and dismantled at an onshore location. Re-use followed by recycle will be the prioritised options.</p>	<p>Complies with OSPAR requirements and DESNZ guidelines and maximises recycling of materials.</p> <p>Leaves clear seabed, removes a potential obstruction to fishing operations and maximizes recycling of materials, to comply with OSPAR requirements and OPRED guidance.</p>
2. Pipeline and Umbilical	
<p>Pipeline and umbilical chemical cores flushed clean and left buried in situ.</p> <p>The umbilical chemical cores have been flushed through with filtered seawater from A2D into the 8" export pipeline at Helvellyn. The 8" pipeline has then been flushed from A2D with filtered seawater at velocity with two pipeline volumes and the contents disposed of down the Helvellyn well.</p> <p>Pipeline and umbilical sections that are buried and/or rock dumped will remain in situ. The pipeline and umbilical are buried to a depth of 1.5-1.8m below natural seabed level for 97.8% of the route. The</p>	<p>Comparative Assessment concludes minimal seabed disturbance, lower energy usage and reduced risk to personnel is the practicable solution compared to a complete or partial removal option where the pipeline and umbilical are buried or rock dumped.</p> <p>To leave, as far as reasonably practicable, a clear seabed to comply with DESNZ guidance.</p>

<p>remaining surface laid tie-in spools and pipeline sections, their associated umbilical lengths and stabilisation features (mattresses and gravel bags) will be removed, returned to shore, and recycled. If any practical difficulties are encountered WPRL will consult OPRED.</p>	
3. Anode Sleds	
<p>There are four anode sleds and all will remain. Two sleds buried under rock dump. One sled buried within the pipeline trench. One sled is partially buried by rock dump, <5% exposed on the seabed (KP 0.945). Any individual anodes at the anode sled location 2 that can be seen on the seabed surface at the time of decommissioning will be cut and recovered.</p>	<p>To leave, as far as reasonably practicable, a clear seabed to comply with DESNZ guidance.</p>
4. Wells	
<p>P&A is in accordance with HSE 'Offshore Installations and Wells Design and Construction Regulations 1996', 'Offshore Energies UK Guidelines and licence conditions for the Suspension and Abandonment of wells Issue 7, November 2022', and compliant with the relevant WONS applications. Any problems encountered the relevant authority will be consulted.</p> <p>Conductor will be cut a minimum of 3m below the natural seabed level. If any practical difficulties are encountered WPRL will consult OPRED.</p>	<p>Meets HSE regulatory requirements and is in accordance with OEUK and NSTA guidelines and licence conditions.</p>
5. Interdependencies	
<p>The Helvellyn pipeline will be decommissioned up to the first riser elbow flange approximately 2m above seabed at the A2D platform. Similarly, the Helvellyn umbilical will be decommissioned up to the bellmouth at the base of the A2D jacket. The riser sections of the Helvellyn pipeline and umbilical will be decommissioned at the same time as the A2D jacket which is subject to a separate Decommissioning Programme by PUK.</p> <p>The timing for the Helvellyn tie-in spools and associated mattresses removal within the A2D 500m safety zone will be agreed with PUK and could be delayed to coincide with part of the future A2D seabed clearance.</p>	

1.6 Field Location Including Field Layout and Adjacent Facilities

Figure 1.1 Field Location in UKCS Quadrant 47

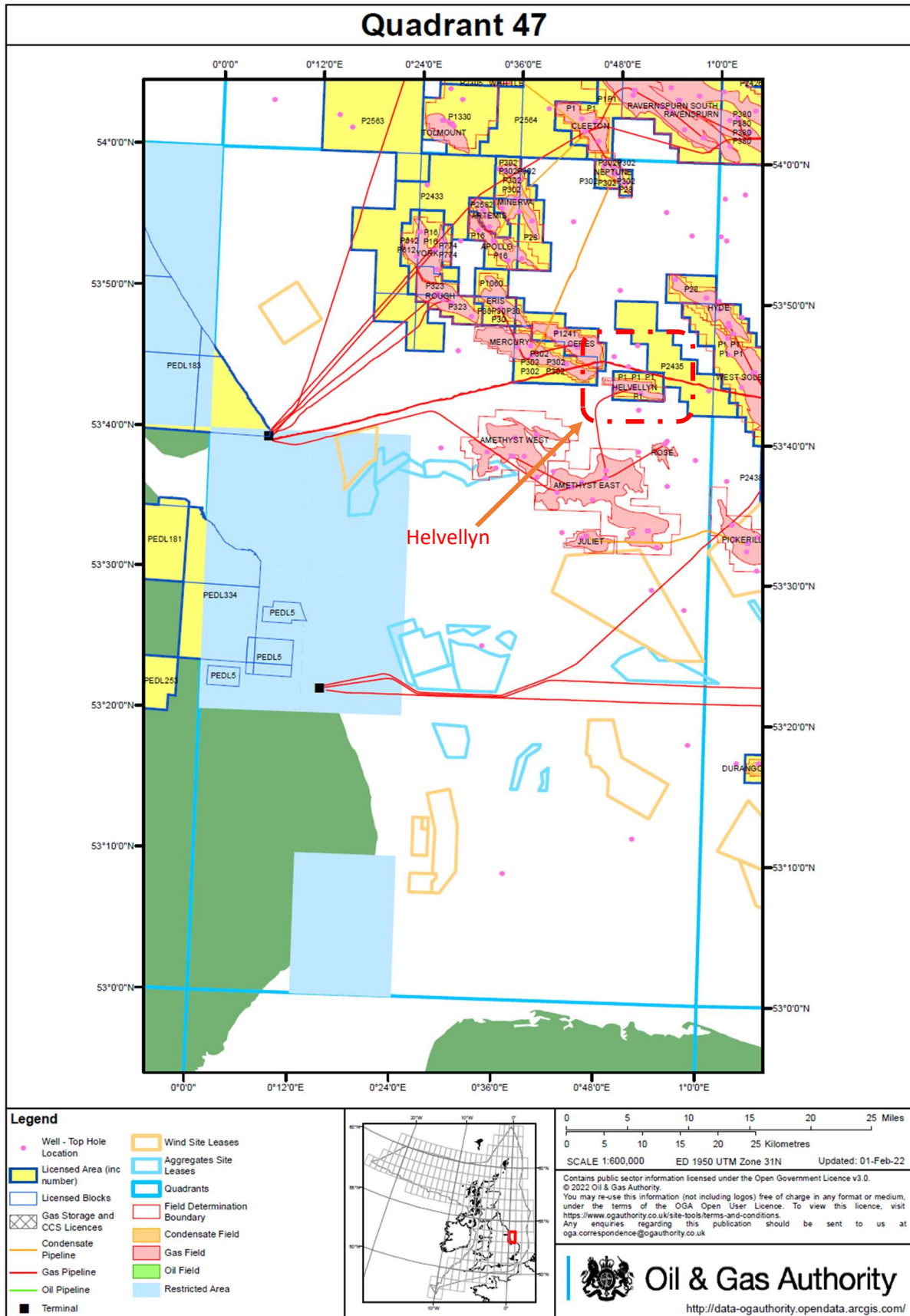
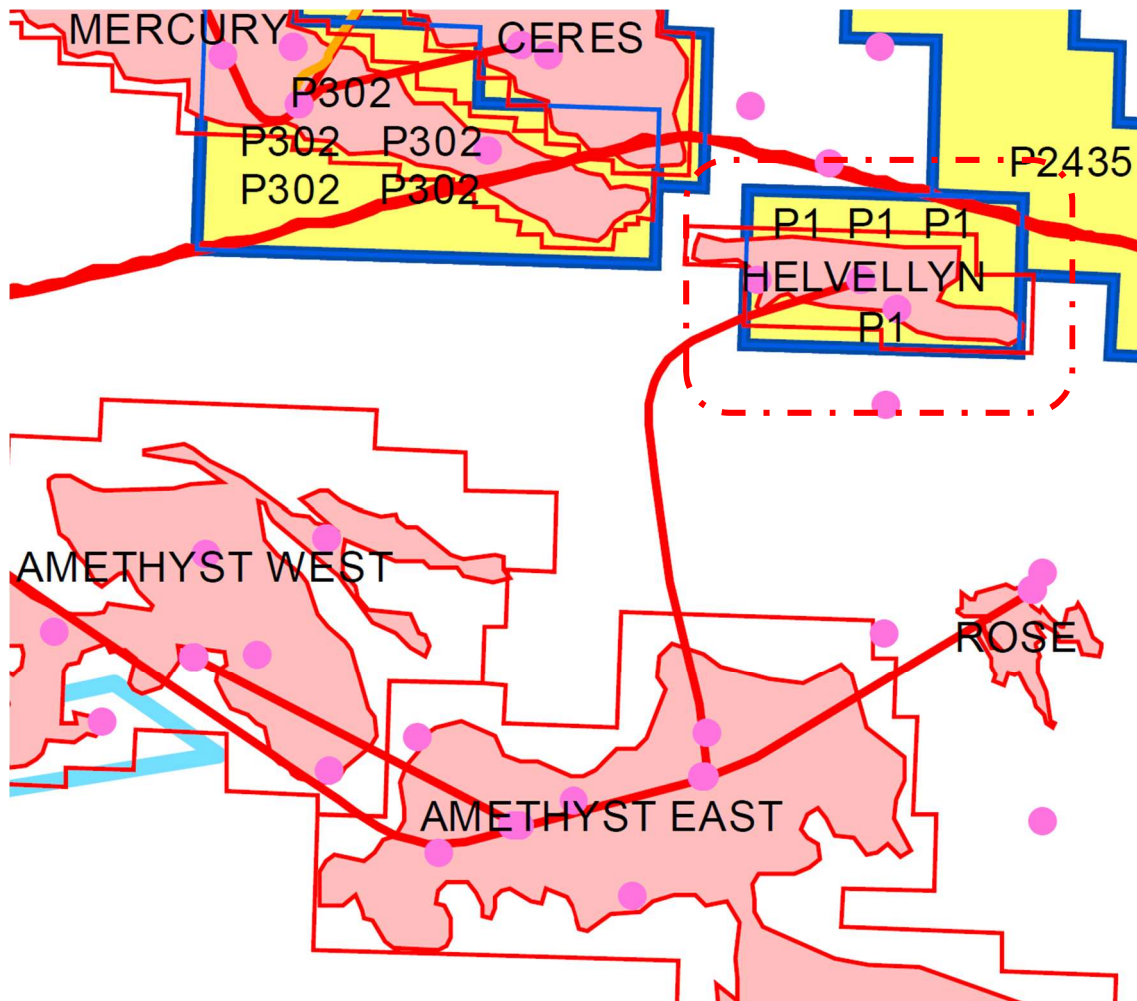


Figure 1.2 Field Location in UKCS Quadrant 47 – detail



Note: Rose Decommissioned

Figure 1.3 Schematic Field Layout Map

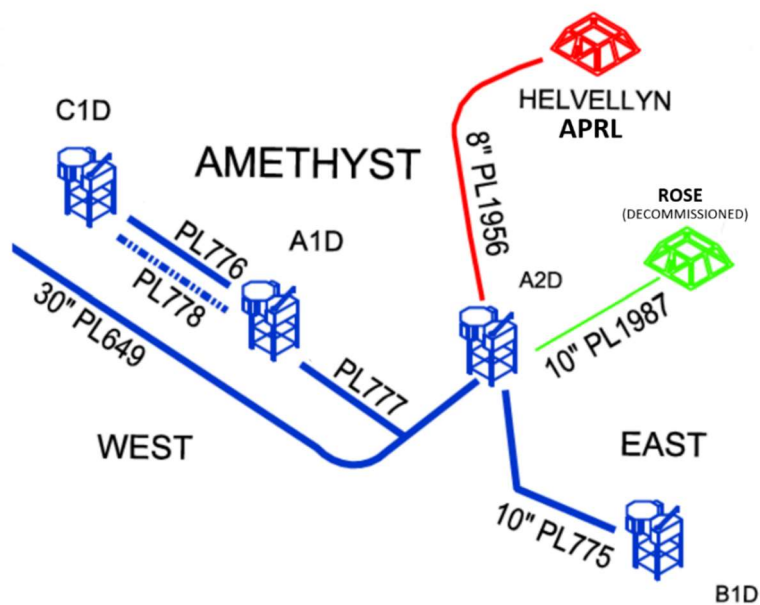


Figure 1.4 Marine Protected Areas surrounding Helvellyn

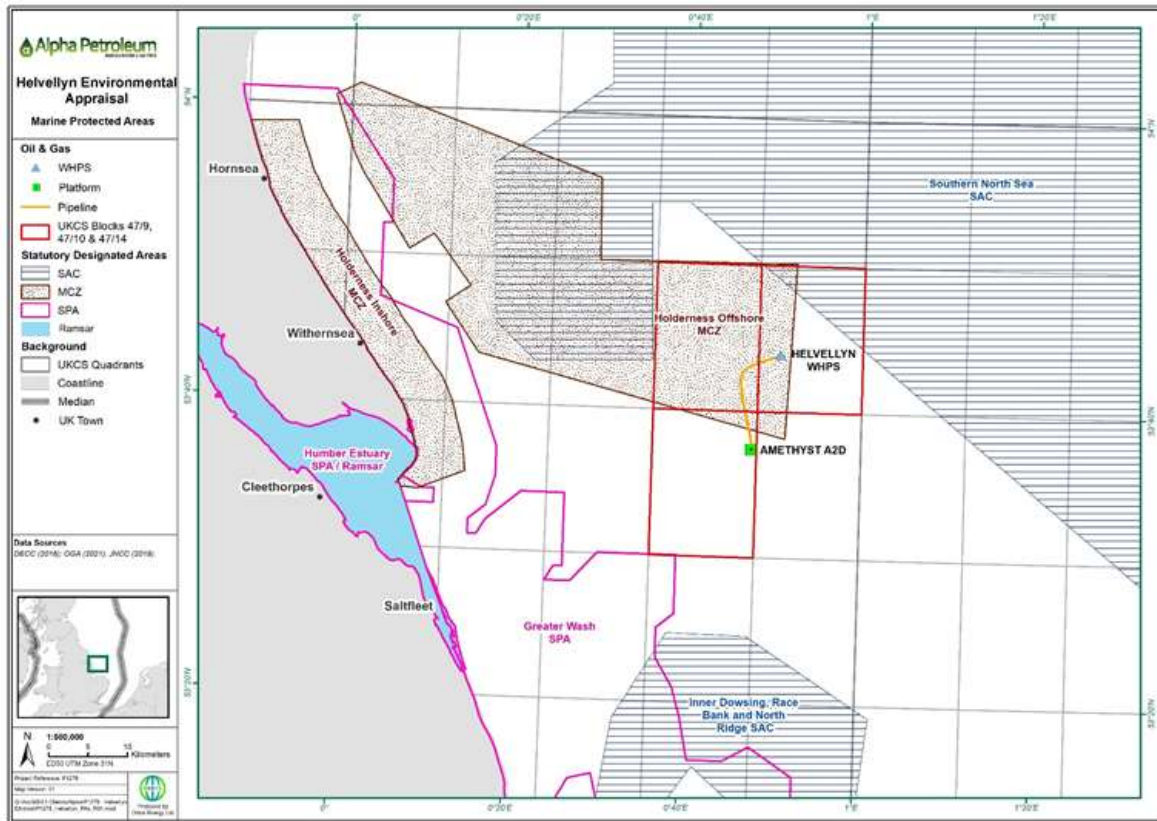


Figure 1.5 Field Location and Adjacent Facilities

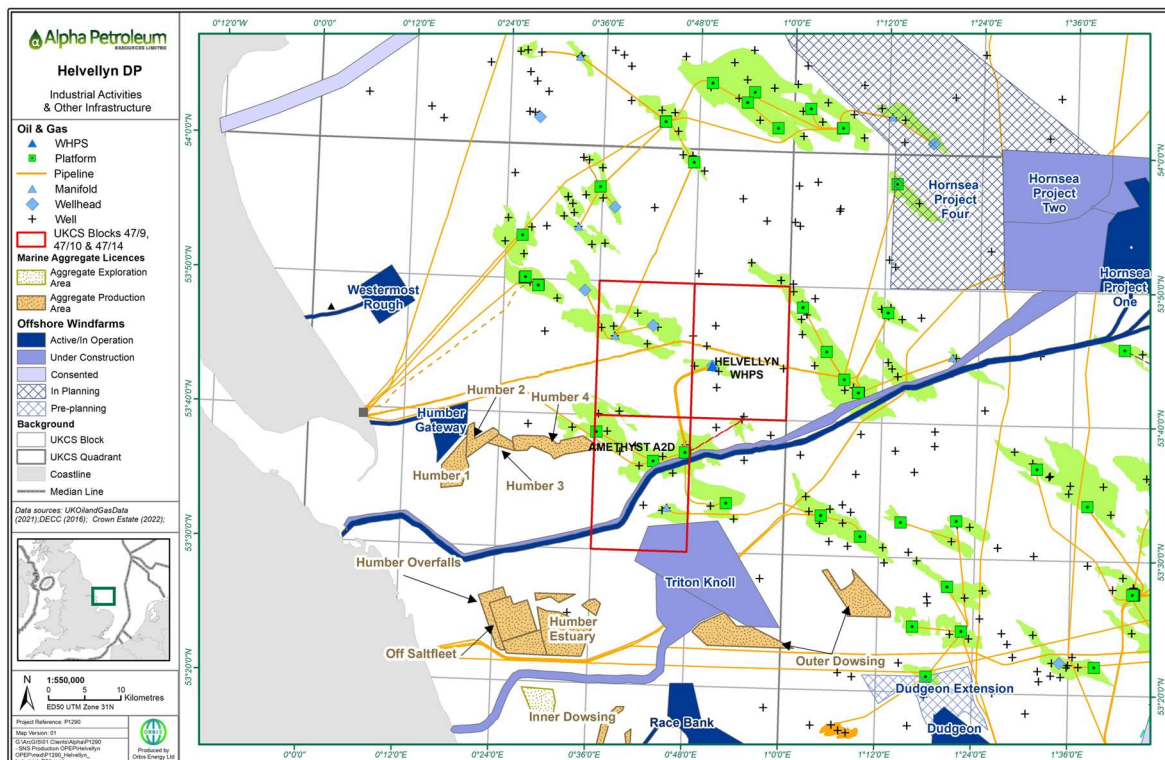


Table 1.6: Adjacent Facilities

No.	Operator	Name	Type	Distance/ Direction	Information	Status
1	Perenco (UK) Limited	Amethyst West. A1D, A2D, B1D	Platforms	13km South Southwest, 195°	Third party installation	Non-Operational
2	Perenco (UK) Limited	Amethyst West. C1D	Platform	18km Southwest, 239°	Third party installation	Non-Operational
3	Perenco (UK) Limited	Ravenspurn	Platforms	33km – 44km North northeast, 30°	Third party installation	Operational
4	NEO	Babbage	Platform	36 km Northeast, 30°	Third party installation	Operational
5	Perenco (UK) Limited	Cleeton CC, PQ, WLTR	Platforms	34 km Northwest, 330°	Third party installation	Operational
6	Perenco (UK) Limited	West Sole	Platforms	16 km East, 90°	Third party installation	Operational
7	Perenco (UK) Limited	Hoton	Platform	25 km Northeast, 60°	Third party installation	Operational
8	Perenco (UK) Limited	Hyde	Platform	15 km Northeast, 30°	Third party installation	Operational
9	Perenco (UK) Limited	Malory	Platform	34 km Southeast, 130°	Third party installation	Operational
10	Perenco (UK) Limited	Minerva	Platform	26 km Northwest, 320°	Third party installation	Operational
11	Perenco (UK) Limited	Neptune	Platform	28 km Northwest, 350°	Third party installation	Operational
12	Perenco (UK) Limited	Pickerill A	Platform	25 km Southeast, 150°	Third party installation	Non-Operational
13	Perenco (UK) Limited	Pickerill B	Platform	30 km Southeast, 130°	Third party installation	Non-Operational
14	Spirit Energy	Ceres	Subsea well	10 km Northwest, 320°	Third party installation	Operational
15	Perenco (UK) Limited	Minerva	Subsea well	25 km Northwest, 330°	Third party installation	Operational
16	Spirit Energy	Eris	Subsea well	37 km Northeast, 40°	Third party installation	Operational
17	Perenco (UK) Limited	West sole pipelines PL28, PL145	Pipelines	3 km North	Third party installation	Operational

Impacts of Decommissioning Proposals

Amethyst A2D is the only installation affected by Helvellyn decommissioning. The Helvellyn riser from and including the riser flange, the umbilical from the J-tube bellmouth, the J-tube and all associated Helvellyn infrastructure on Amethyst A2D is owned by PUK and will be decommissioned by PUK as part of their future Amethyst decommissioning in accordance with their section 29 notification.

1.7 Industrial Implications

It is the intention to develop a contract and procurement strategy that will result in a safe, efficient, and cost-effective execution of the decommissioning works that is scheduled in order to provide flexibility. Where appropriate, existing framework agreements may be used for decommissioning scope. WPRL will aim to reduce costs by combining scope with other Operators should the opportunity arise.

WPRL has submitted the Supply Chain Action Plan (SCAP) to NSTA which outlines the Helvellyn decommissioning project activities in relation to its supply chain. This is to derive maximum value, reduce expenditure and demonstrate WPRL are well positioned to deliver their Decommissioning Programme commitments. The SCAP outlines how WPRL intends to contribute towards Total Value Added through fair and open engagement with its chosen supply chains, through a robust 'Invitation To Tender' (ITT), assessment process and evaluation process.

WPRL have identified the intention to complete the work using vessel(s) within the Decommissioning Programmes. The vessel(s) will be identified at a later date.

2. DESCRIPTION OF ITEMS TO BE DECOMMISSIONED

2.1 Subsea Installation

Table 2.1: Subsea Installation Information				
Subsea installations	Number	Size/Weight (Te)	Location	Comments/Status
Wellhead and xmas tree	1	~ 14 Te	53° 43' 54.18" N 00° 50' 31.67" E	The well is suspended and will undergo plug and abandonment.
Flow base	1	8m x 6.3m x 4m high. ~100 Te		The flow base and protection cover are referred to as the WHPS.
Protection cover	1			The WHPS is not secured to the seabed by piles or pins. The Flow base includes manifold pipework, see figure 3.3

2.2 Pipeline and Umbilical Features

Table 2.2: Pipeline and Umbilical Information					
Pipeline Number	Description	Diameter and PWA Consented Length	Material	Burial Status	Pipeline Status
PL1956 from and including Helvellyn Wellhead Protection Structure to and not including Amethyst A2D Riser Flange	Gas export pipeline conveying unprocessed natural gas from Helvellyn WHPS valve to Amethyst A2D ESDV. This DP is only for the pipeline from the WHPS to and not including the Amethyst A2D Riser Flange.	8" (219.1mm) diameter, 15.702km long	API 5L X65 carbon steel pipe with 3 micron Fusion Bonded Epoxy coating	Trenched and buried up to tie-in spools*	Out of use
PLU1957 from and not including Amethyst A2D J-Tube bellmouth to and including Helvellyn Subsea Wellhead Stab Plate	Umbilical, 9 cores, from Amethyst A2D to Helvellyn for hydraulic control and chemicals (corrosion / hydrate inhibitor mixture), and annulus vent. This DP is only for the umbilical from Amethyst A2D J-Tube bellmouth	2.065" (52.5mm) diameter, 15.70km long	Cores; 2 off ½" x 0.49" wall, 316L stainless tubes, 2 off 3/8" x 0.49" wall 316L stainless tubes with High Density Polyethylene (HDPE) jacket to 0.5" diameter, 4 off 3/8" x 0.49" wall 316L stainless tube, 1 off 5/8" x 0.65" seacat 19D alloy tube with zinc anode coating to 0.725".	Trenched and buried up to tie-in spools*	Out of use

	to and including the WHPS		All cores wrapped with HDPE sheath jacket		
<p>*97.8% of the pipeline is trenched with 2.2% surface laid. Of the surface laid sections ~43% is mattress protected and ~57% is rock dump protected. In total 9.9% of the route is rock protected either within or outside the trenched sections.</p>					

2.3 Pipeline and Umbilical Stabilisation Features

Table 2.3: Pipeline and Umbilical Stabilisation Features				
Stabilisation Feature	Total Number	Weight (Te)	Location(s)	Exposed/Buried/Condition
Concrete mattresses	30	≈3.54 Te each	<p>Along PL1956 and PLU1957.</p> <p>15 within the Helvellyn 500m safety zone. 8 of the mattresses are fronded.</p> <p>15 within the Amethyst A2D 500m safety zone. 5 of the mattresses are fronded.</p>	Exposed at the ends. Fronds on mats appear to have partially been lost over time with only some remaining.
Gravel bags	≈40	25kg each	Various around the concrete mattresses	Buried and exposed around the concrete mattresses.
Rock Dump	42 locations	≈9,817 Te	Total combined length of rock dump over the pipeline is 1,530m. Of which ~800m is at the Helvellyn approach and ~84m is at the Amethyst A2D platform approach with 40 spot locations along the route	Exposed
Anode Sleds (Helvellyn)	4	≈1.5 Te each	At the Helvellyn end, KP 1.295, KP 0.945, KP 0.586 and KP 0.245	Two sleds buried under rock dump. One sled partially buried by rock dump, <5% exposed on the seabed (KP 0.945). One sled buried within the pipeline trench.

2.4 Wells Information

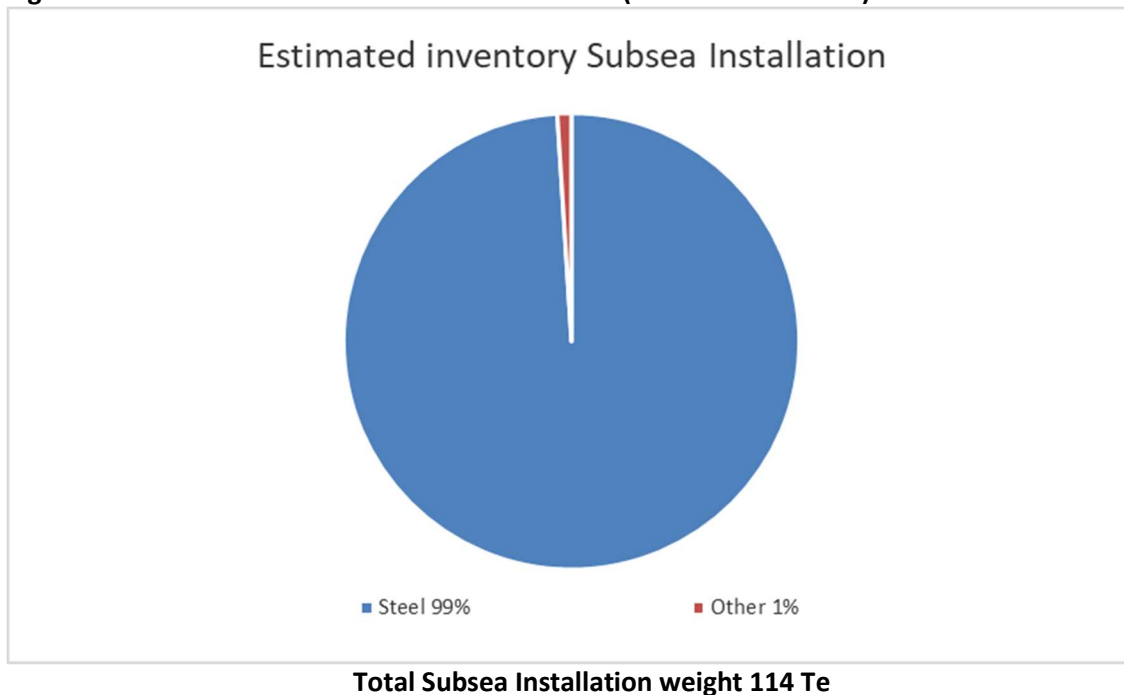
Table 2.4: Well Information			
Subsea Well	Designation	Status	Category of Well
47/10-7y	Gas Production	Shut-in	PL 3-3-3

2.5 Drill Cuttings

There is no evidence of drill cuttings associated with the Helvellyn subsea installation. Drill cuttings that were generated during the prior drilling activity would have been distributed widely during drilling due to the local currents. WPRL has carried out seabed sampling to verify the absence of any cutting debris.

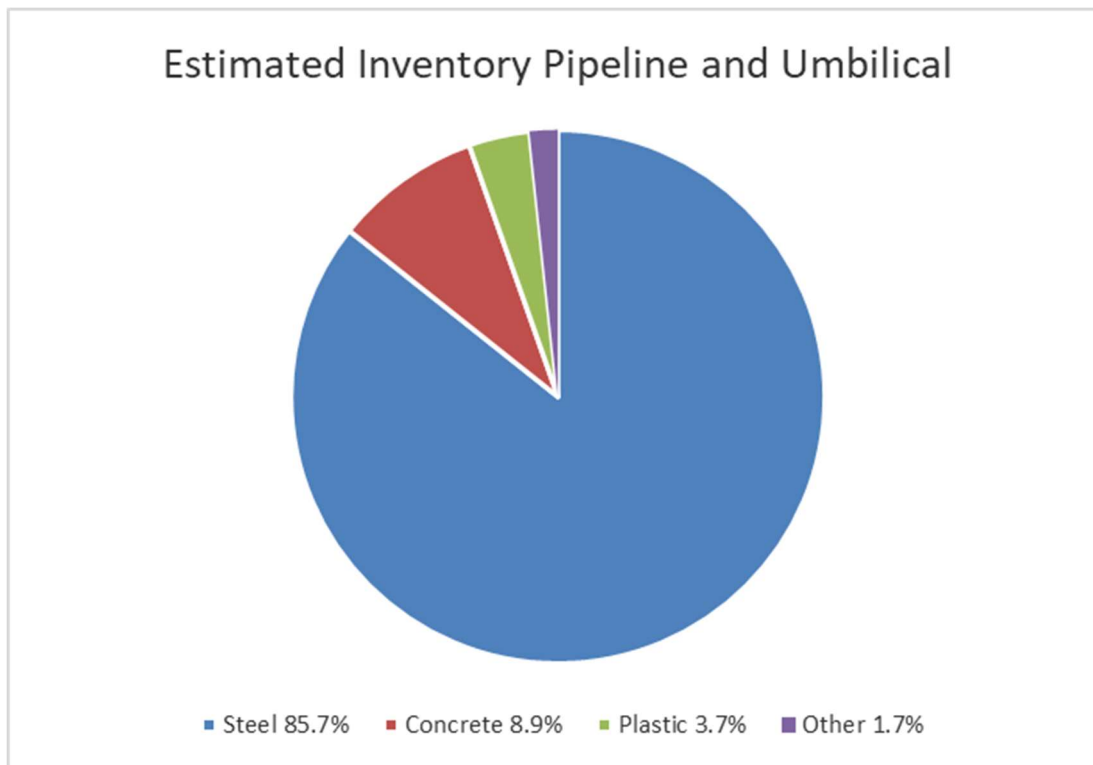
2.6 Inventory Estimates

Figure 2.1: Pie Chart of Estimated Inventories (Subsea Installation)



Note: WHPS ~100Te, wellhead and tree ~14Te

Figure 2.2: Pie Chart of Estimated Inventory (Pipeline and Umbilical)



Total Pipeline and Umbilical weight 1,194 Te.

Note: Includes all stabilisation features as detailed in table 2.3.

Note: Excludes rock as detailed in table 2.3.

Note: Refer to the EA for further information on inventories remaining and their environmental impact.

3. REMOVAL AND DISPOSAL METHODS

Waste will be dealt with in accordance with the Waste Framework Directive 2008/98/EC. The reuse of a subsea installation or pipeline and umbilical (*or parts thereof*) is first in the order of preferred decommissioning options, followed by recycling, recover other value and landfill if no alternative is available. Waste generated during decommissioning will be segregated by type and transported to shore in an auditable manner to a disposal yard/dismantling site and recycled through licensed waste contractors in accordance with regulations. Waste disposed of outside of the United Kingdom will be in accordance with the Transfrontier Shipment of Waste Regulations 2007. Steel and other recyclable metal are estimated to account for the greatest proportion of the materials inventory. A decision has yet to be made about disposal routes, if taken out with the UK, Transfrontier Shipment of Waste Regulations will be adhered to. OPRED will be informed once a disposal yard has been selected. Reference EA, section 3.5, for further information on waste.

Re-use / alternative uses for the Helvellyn Subsea Installation including using the pipeline as part of another project infrastructure, the use of the well for CCSU and relocation of the WHPS have been considered and none of these were deemed viable.

The subsea tree will be assessed for use as spares for WPRL asset portfolio. OPRED will be advised as decisions are made regarding re-use of subsea tree vs recycling and disposal.

3.1 Subsea Installation

3.1.1 Subsea Installation Decommissioning Overview

The Helvellyn Subsea Installation comprises of a WHPS which is made up of a Flow Base with subsea manifold pipework overlaid with a protection cover. The installation measures 8m x 6.3m x 4m high and weighs approximately 100 Te. Within the structure is a single tree and wellhead weighing approximately 14 Te.

Figure 3.1: Drawings of the Subsea Installation

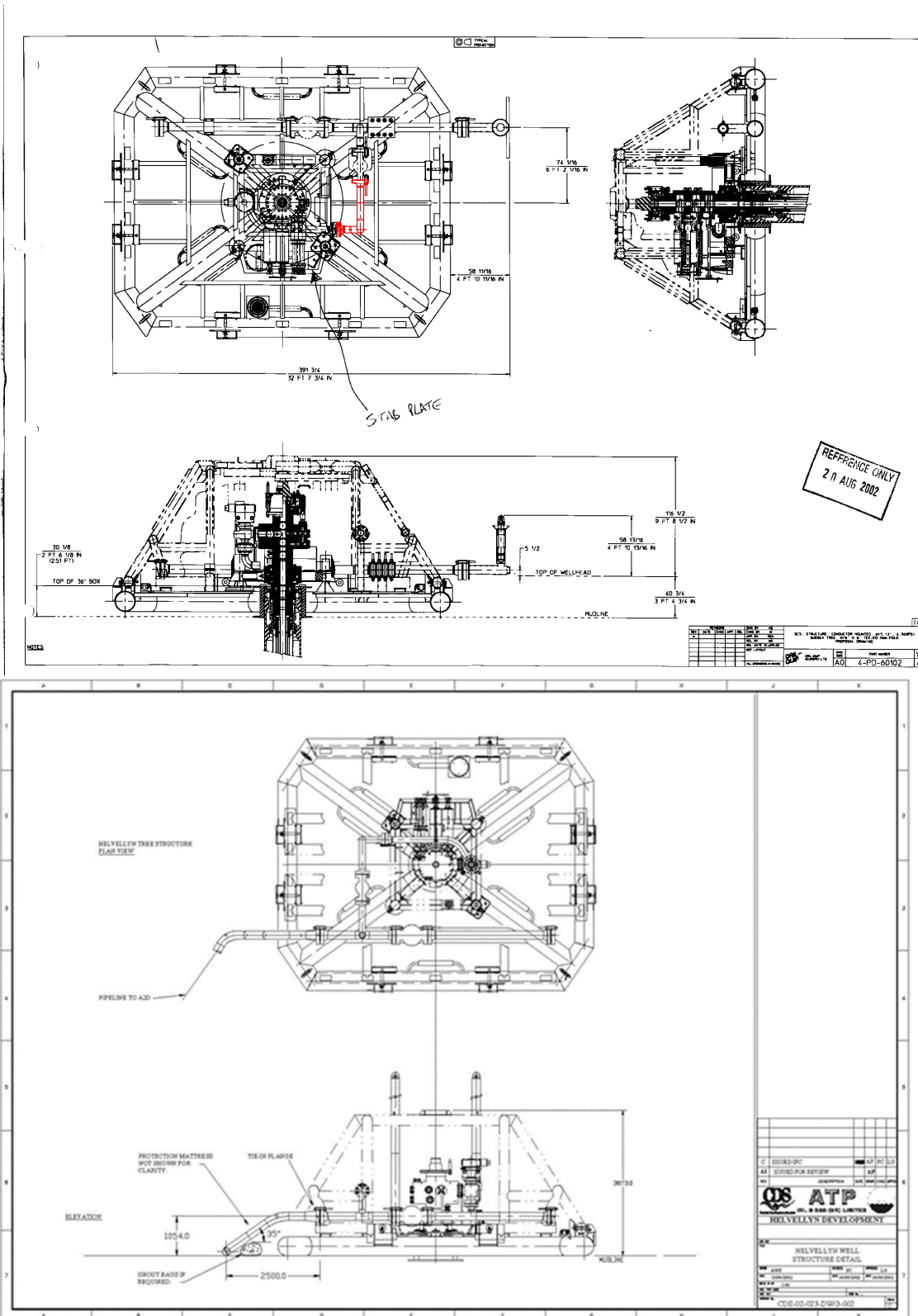


Figure 3.2: Photo of the Subsea Installation pre-install

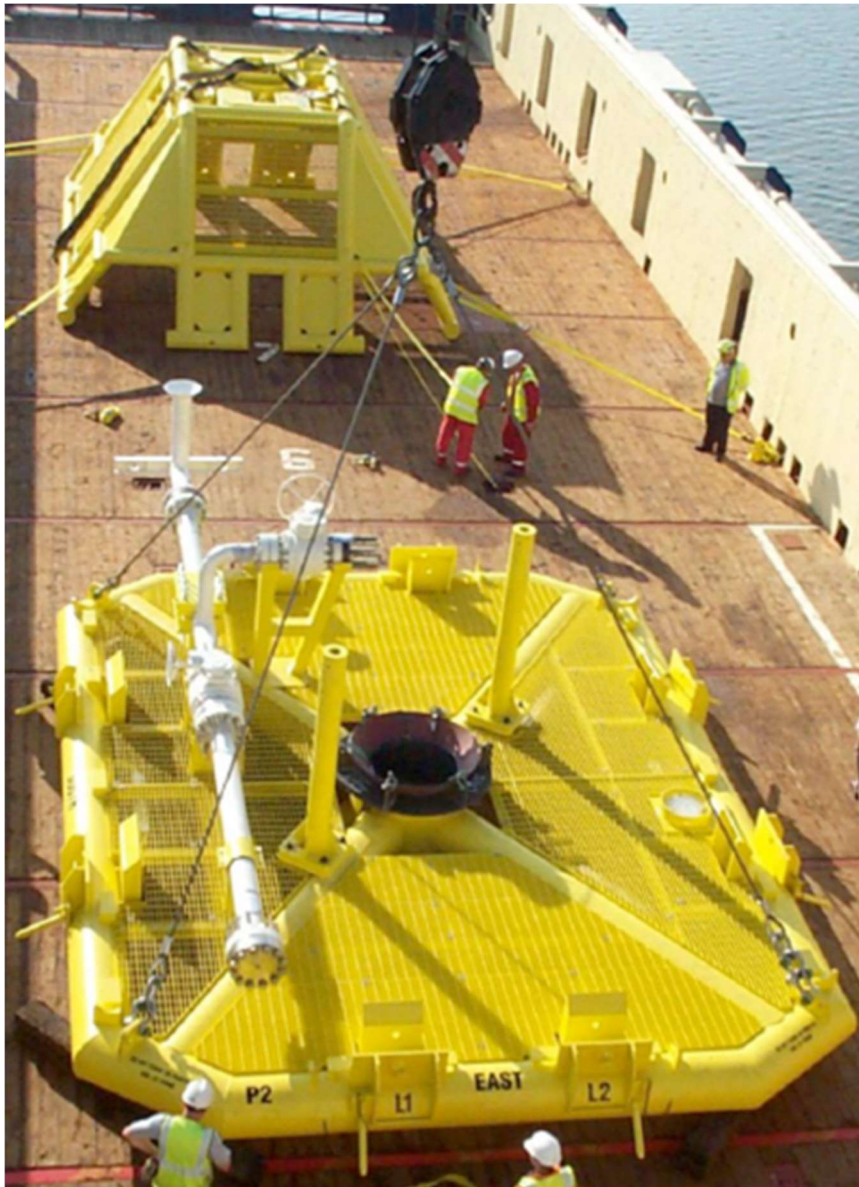
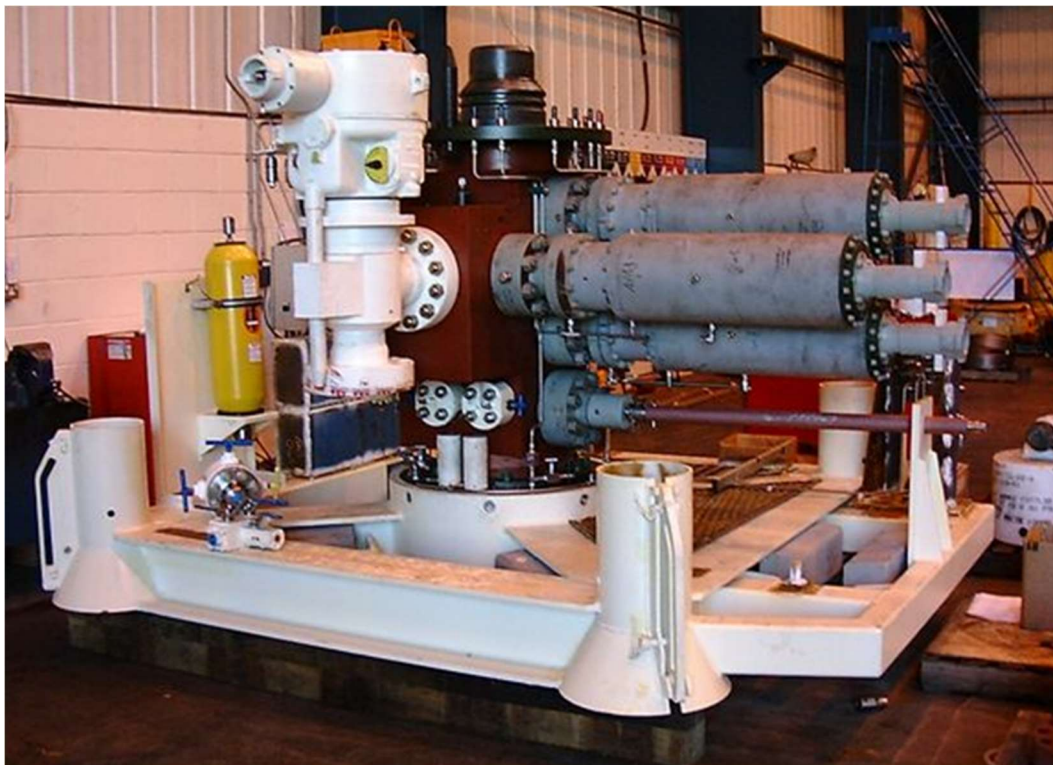
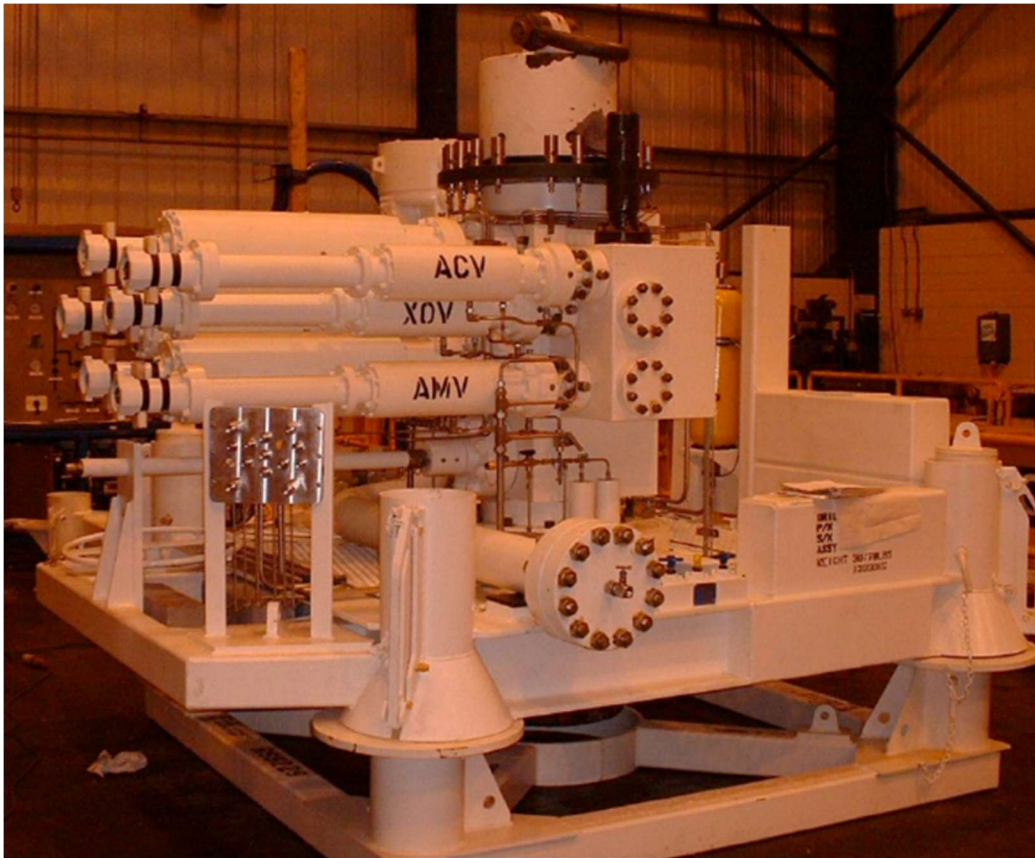


Figure 3.3: Photos of the xmas tree pre-install



3.1.2 Preparation/Cleaning:

Table 3.1: Cleaning of the Subsea Installation for Removal		
Waste Type	Composition of Waste	Disposal Route
Hydrocarbons	Process fluids, and lubricants	<p>The pipeline and umbilical chemical injection cores have been flushed clean with filtered seawater and the fluids injected into the Helvellyn well.</p> <p>The subsea installation, pipeline tie-in spools / umbilical underneath removed mattresses will then be brought to shore and any residual fluids and lubricants remaining will be appropriately disposed of</p>
Other hazardous materials	NORM, LSA Scale	<p>Some of these materials may be present and if identified will be transported onshore for re-use/disposal by appropriate methods. NORM will be disposed of in accordance with the appropriate permits.</p> <p>In the event that a Transfrontier Shipment of Waste permit is required, WPRL will liaise with the relevant Waste Authority and ensure all relevant permits/consents are in place</p>
Original paint coating	Lead-based paint / Chromium VI Paint	Helvellyn has no known lead-based paint or Chromium VI Paint. Appropriate safety measures will be taken dealing with all coatings
Marine Growth	Marine Growth	Marine growth will be removed by high pressure cleaning offshore, only where necessary and practicable, with the majority of marine growth removed onshore.
Onshore dismantling sites	Only appropriately licenced sites will be considered as part of the selection process in addition the facility chosen must demonstrate proven track record of waste stream management throughout the deconstruction process. They will also be required to demonstrate their ability to deliver innovative recycling options.	

3.1.3 Removal Methods:

Table 3.2: Subsea Installation Removal	
Description	Removal Option
Subsea Installation - Tree, Wellhead, WHPS	<p>All items fully recovered and brought to shore. The rig / vessel used for the P&A operation will recover items. Any items not able to be recovered during the P&A operation will be wet stored under appropriate permits and then recovered during the operation to remove mattresses, tie-in spools / umbilical lengths.</p> <p>If any practical difficulties are encountered during recovery WPRL will consult OPRED.</p> <p>Conductor will be cut a minimum of 3m below the natural seabed level.</p>

3.2 Pipeline and umbilical

Decommissioning Options:

* **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) Removal of tie-in spools and umbilical underneath removed mattresses |

Table 3.3: Pipeline and Umbilical Decommissioning Options			
Pipeline	Condition of line/group (Surface laid/trenched/buried/spanning)	Whole or part of pipeline/group	Decommissioning options considered
PL1956, PLU1957	Trenched, buried.	Whole of the pipeline and umbilical	1 & 2 (ref Option 3 of the CA Full removal of pipelines by reverse reeling and Cut and Lift methods), 6, 8 & 9 (Ref Option 2 of the CA Partial removal of pipeline) and 7 (Ref Option 1 of the CA Leave Full Pipeline in situ)

Note: The above Options key is taken from the Decommissioning Programme streamlined template and is not the same option numbers used in the supporting Helvellyn Comparative Assessment (CA) document. The option numbering and descriptions used in the CA are described in section 5 of that document.

3.3 Pipeline and Umbilical Stabilisation Features / Anode Sleds

Table 3.4: Pipeline and Umbilical Stabilisation Features / Anode Sleds			
Stabilisation feature(s)	Number	Option	Disposal Route (if applicable)
Concrete mattresses (Helvellyn)	15 (8 which are fronded)	<p>Full recovery of all exposed and not buried to 0.6m below the seabed. Those covered with rock dump are to be left in situ.</p> <p>It is intended that 14 exposed or partially exposed mattresses will be recovered to shore. It is also intended to remove the pipeline and umbilical underneath each recovered mattress.</p> <p>A single mattress may be used to cover the remaining pipeline and umbilical end if exposed. The mattress will be moved, the pipeline and umbilical cut, and then the mattress placed over the cut ends.</p>	Return to shore for reuse / recycling / disposal

		In the event of practical difficulties during the removal execution, OPRED will be consulted, and an alternative method of decommissioning will be examined through a comparative assessment.	
Concrete mattresses (Amethyst A2D)	15 (5 which are fronded)	<p>Full recovery of all exposed and not buried to 0.6m below the seabed. Those covered with rock dump are to be left in situ.</p> <p>It is intended that 14 exposed or partially exposed mattresses will be recovered to shore. It is also intended to remove the pipeline and umbilical underneath each recovered mattress.</p> <p>A single mattress may be used to cover the remaining pipeline and umbilical end if exposed. The mattress will be moved, the pipeline and umbilical cut, and then the mattress placed over the cut ends.</p> <p>In the event of practical difficulties during the removal execution, OPRED will be consulted, and an alternative method of decommissioning will be examined through a comparative assessment.</p>	Return to shore for reuse / recycling / disposal
Gravel bags	≈40 around the concrete mattresses	Leave in situ if buried 0.6m below the seabed. Full recovery if not buried and if the associated mattresses in the vicinity are to be recovered.	Return to shore for reuse / recycling / disposal
Rock Dump (Helvellyn approach and along route)	≈41 locations	Leave in situ.	N/A
Rock Dump (Amethyst A2D)	1 location	Leave in situ.	N/A
Anode Sleds	4	Leave in situ. If any individual anodes at the anode sled location 2 can be seen on the seabed surface at the time of decommissioning these will be cut and recovered.	N/A

Figure 3.4: Drawing of the Helvellyn Stabilisation Features

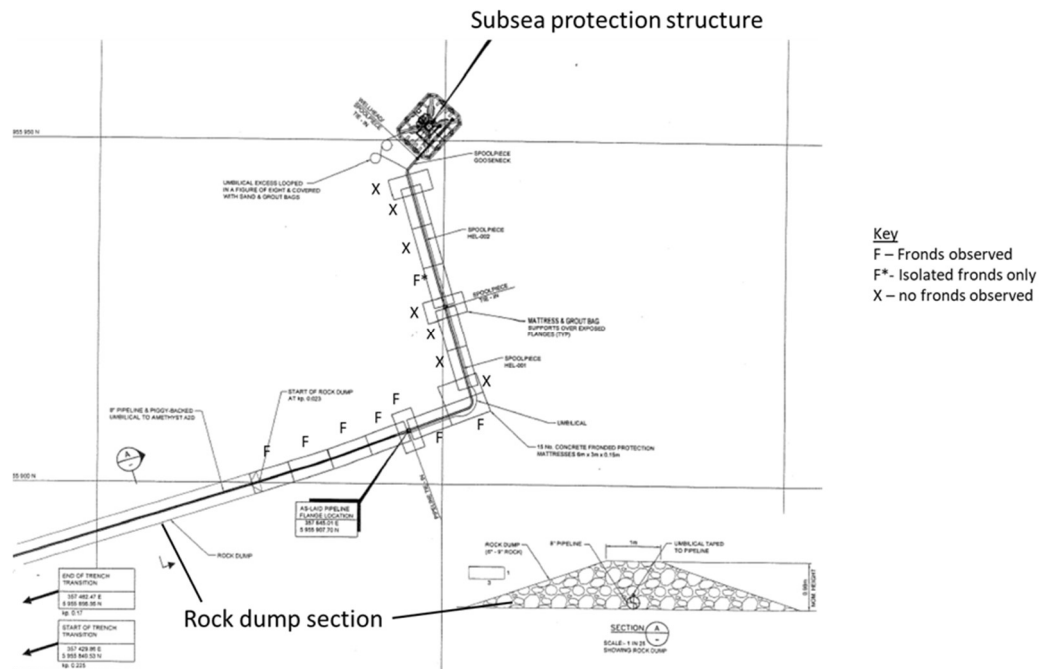


Figure 3.5: Drawing of the Amethyst A2D Stabilisation Features

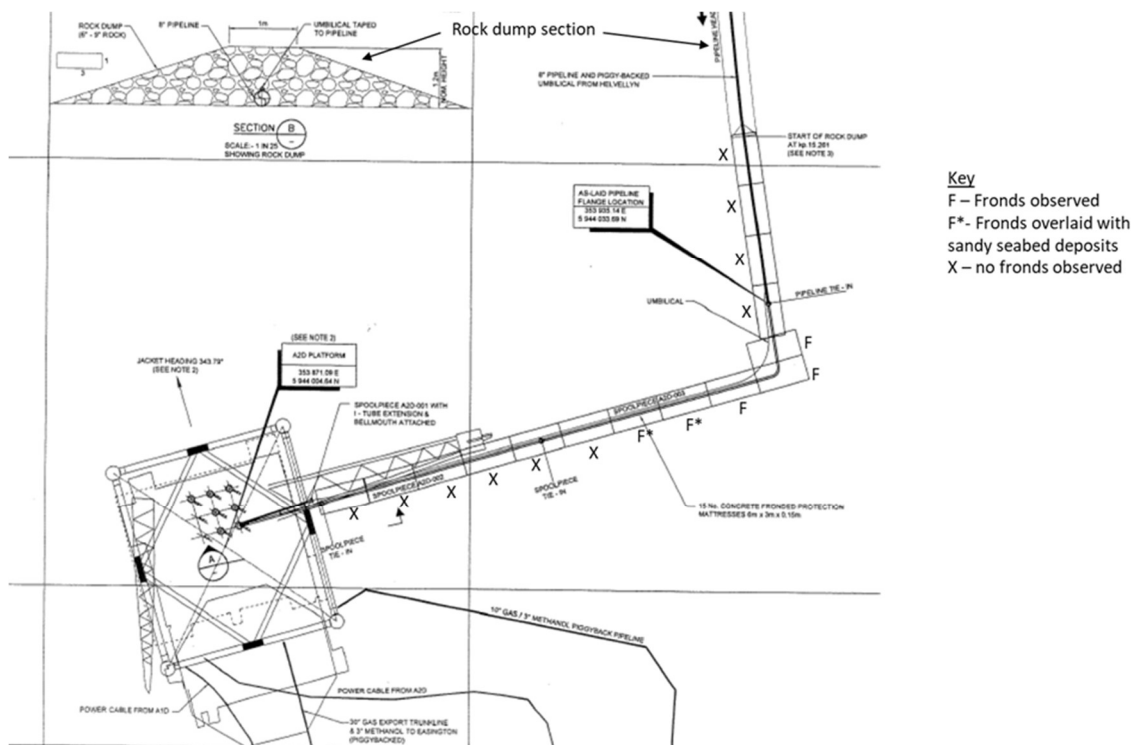
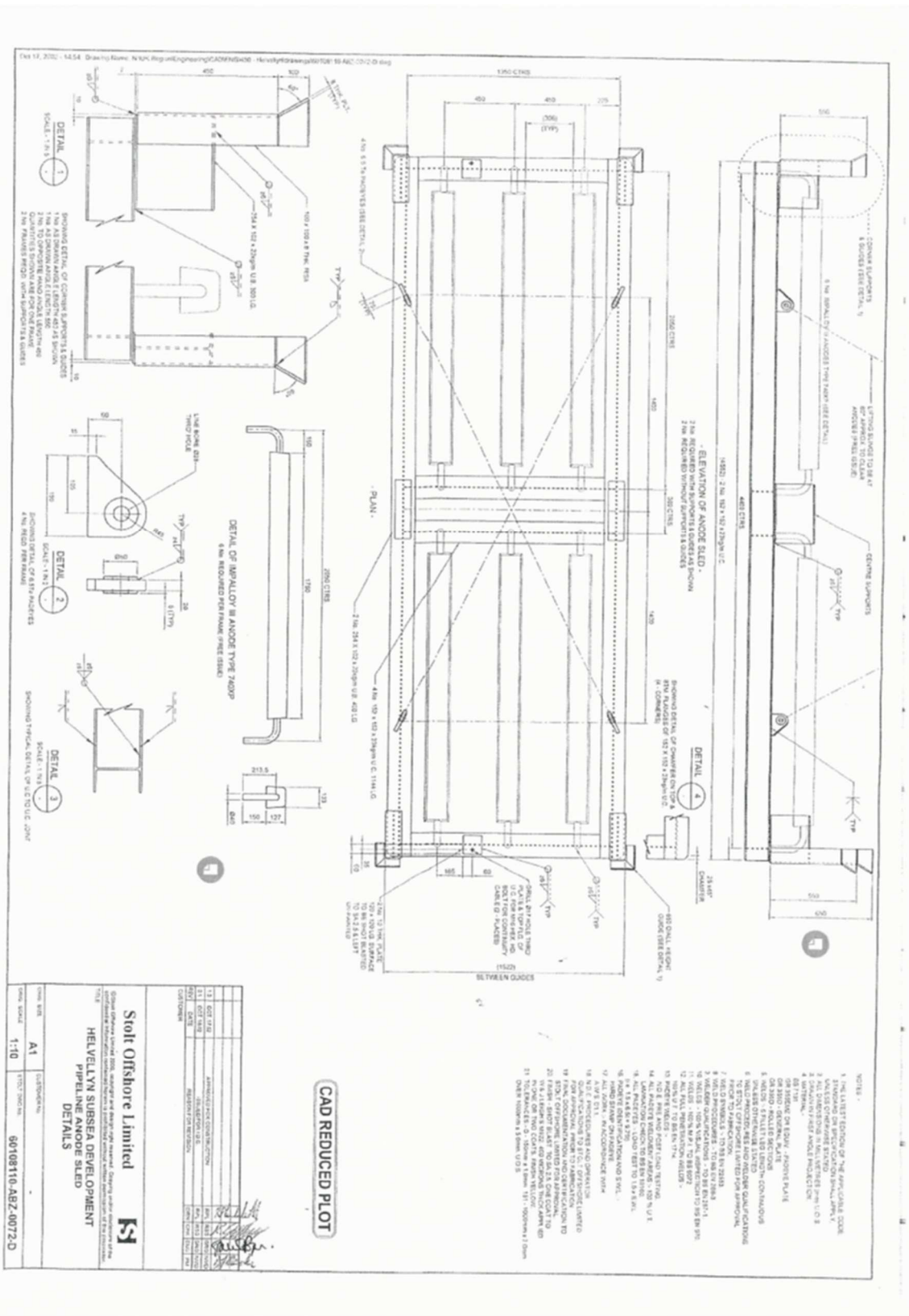


Figure 3.6: Drawing of the Anode Sled



Comparative Assessment Method:

The options were assessed using the OPRED Decommissioning Guidance Notes and project specific guidelines developed for a detailed assessment workshop.

A two-stage process with an early option screening assessment to narrow options to a manageable number followed by a detailed comparative assessment of selected options was adopted.

Stage 1: Option screening

A list of potential decommissioning options was developed for each pipeline which included an option for full recovery of all infrastructure, a leave all infrastructure in situ option and several partial removal options of specific elements. In a desktop exercise each of these options were then evaluated against safety, environmental, technical, societal, and economic categories, and considerations. They were then identified within each category as either an acceptable solution, a solution that may be acceptable with appropriate actions or control measures or an unacceptable option. Each option was then reviewed across all categories to establish whether the option should be selected for a more detailed comparative assessment. The outcome of this desktop exercise was then peer reviewed by an independent subsea expert and was shared with OPRED to ensure agreement that all potentially viable options were considered as part of the stage 2 detailed assessment.




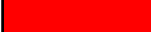
Stage 2: Detailed assessment

Following development and approval of a Terms of Reference document a workshop with available stakeholders and WPRL decommissioning project team members was held. The workshop was conducted partially via MS Teams as a result of COVID-19 travel restrictions and revised working arrangements. This, along with pre workshop reading material and post workshop sharing of the output result worksheets ensured all relevant parties' input to the assessment was captured.

The workshop rated the impact of the selected options with a further review against safety, environmental, technical, societal, and economic categories. Subcategories were reviewed and allocated a red, green, or amber rating code for each option in line with a pre-prepared guide table. Once the impacts for all subcategories were allocated the workshop attendees assigned an overall rating for each Category. A high, mid, or low certainty was also allocated to the degree of definition of the methods to be used, status of the infrastructure, equipment required, public opinion perception and any hazards.

A final colour rating to each option/sub option in line with the below table was then allocated.

Final rating options

Preferred solution	
Broadly acceptable	
Tolerable not preferred	
In tolerable, not acceptable	

Outcome of Comparative Assessment:

Full details of the assessment can be reviewed in the referenced APR_HV_PMGT_005 Helvellyn Pipeline and Umbilical Decommissioning Options Comparative Assessment document but are summarised below.

As a result of the assessment, it is recommended that for both the PL1956 pipeline and the PLU1957 umbilical that a partial removal option is adopted where the majority of the pipeline and umbilical are left in situ. At each end the mattresses covering the pipeline and umbilical shall be removed up until the point where the pipeline and umbilical are rock dumped. The protection mattresses covering the tie-in spools and umbilical shall also be recovered.

The cathodic protection anode sleds should also be left in situ, with any exposed top sections of anodes cut and removed, as they are not a hazard to other users and their average burial is below 0.6m. The sleds will also corrode away over time.

Table 3.5: Outcome of Comparative Assessment		
Pipeline or Group (as per PWA)	Recommended Option	Justification
PL1956, PLU1957	Option 9. Removal of tie-in spools and umbilical underneath removed mattresses	Remainder of pipeline and umbilical already trenched and buried to >0.6m or rock dumped, stable seabed, no snagging hazards. Less disturbance to MCZ
Mattresses	Remove	Compliance with decommissioning guidelines
Anode Sleds	Leave in situ, with any exposed sections cut and removed	No hazard to other users, no impact to MCZ

3.4 Wells

Table 3.6: Well Plug and Abandonment
<p>The well to be abandoned, as listed in Section 2.3 (Table 2.4) will be plugged and abandoned in accordance with:</p> <ul style="list-style-type: none"> • OEUK Well Decommissioning Guidelines – Issue 7 – November 2022 • OEUK Guidelines on Qualification of Materials for the Abandonment of Wells – Issue 2 - 2015 • Design and Construction Regulations (DCR) 2015 <p>A Well Intervention Master Application Template (WIA MAT) and supporting Subsidiary Application Template (SATs) will be submitted via the DESNZ UK Energy Portal to gain consent to carry out the works. An application to decommission the wells will be made through WONS.</p>

3.5 Waste Streams

Table 3.7 Waste Stream Management Methods	
Waste Streams	Removal and Disposal method
Bulk liquids	There will be no bulk liquids other than the residual filtered seawater used to clean the pipeline and umbilical chemical cores
Marine growth	Marine growth will be removed by high pressure cleaning offshore, only where necessary and practicable, with the majority of marine growth removed onshore. It is estimated there will be 5 Te of marine growth.

NORM/LSA Scale	Tests for NORM/LSA scale will be undertaken offshore by the Radiation Protection Supervisor and any encountered will be dealt with and disposed of in accordance with guidelines and under appropriate permit.
Other hazardous wastes	Will be recovered to shore and disposed of in accordance with guidelines and under appropriate permit.
Onshore Dismantling sites	Appropriate licenced sites will be selected. Facility chosen by removal contractor must demonstrate proven disposal track record and waste stream management throughout the deconstruction process and demonstrate their ability to deliver re-use and recycling options.

Table 3.8: Inventory Disposition

	Total Inventory Tonnage	Planned tonnage to shore	Planned tonnage left <i>in situ</i>
Subsea Installation			
WHPS	≈100	≈100	0
Wellhead and tree	14	14	0
Pipeline and umbilical including stabilisation features			
Pipeline and umbilical*	1,071.36	2.9	1,068.46 (99.7%)
Tie-in spools and umbilical under mattresses Helvellyn	4.56	4.56	0
Tie-in spools and umbilical under mattresses Amethyst A2D	4.88	4.88	0
Mattresses Helvellyn	53.1	49.56	3.54 (6.7%). 1 mattress to cover the exposed pipeline and umbilical end following severance.
Mattresses Amethyst A2D	53.1	49.56	3.54 (6.7%). 1 mattress to cover the exposed pipeline and umbilical end following severance.
Gravel bags	1	0.6**	0.4 (40%)
Anode Sleds	6	0	6 (100%)

All recovered material will be transported onshore for re-use, recycling, or disposal.

* Pipeline and umbilical weight differ from the pipeline pie chart weight (1,194 Te) as it excludes tie-in spools, umbilical under mattresses, anodes sleds, mattresses, gravel bags.

** The gravel bags are used to lift and support the pipeline / umbilical so at the correct height to tie onto the A2D riser and bell mouth entry / at Helvellyn and at the WHPS. Every effort will be made to retrieve all gravel bags. When removing tie-in spools / umbilical sections and mattresses the gravel bags can fall into the trench, become buried or may split and are then impracticable to recover.

4. ENVIRONMENTAL APPRAISAL OVERVIEW

4.1 Environmental Sensitivities (Summary)

The environmental sensitivities in the area in which the decommissioning activities will take place are summarised in Table 4.1. Further details are available in the Environmental Appraisal report.

Table 4.1: Environmental Sensitivities	
Environmental Receptor	Main Features
Conservation interests	The Helvellyn WHPS and approximately 12.5km of the pipeline route is located within the boundary of the Holderness Offshore Marine Conservation Zone (MCZ), which is designated for three broad-scale habitat types (A5.1: Subtidal coarse sediment, A5.2: Subtidal sand and A5.4: Subtidal mixed sediments), Ocean quahog (<i>Arctica islandica</i>) and North Sea glacial tunnel valleys. The 2022 pre-decommissioning environmental survey classified the sediment type over the area as the European Nature Information System biotope complex 'Faunal communities of Atlantic circalittoral coarse sediment' (MC32). This biotope complex is contained within the broad-scale habitat 'Subtidal sands and gravels', a priority habitat within UK waters. Due to the cobbles and boulders observed in the survey area, the drop-down videos were assessed for the presence of stony reef. The majority of the survey area was classed as 'Not a reef' (percentage cover of cobbles and boulders < 10 %.), however, four of the drop-down video camera stations were classed as 'Low reef' (percentage cover of cobbles and boulders between 10 % and 40 %). The ross worm <i>Sabellaria spinulosa</i> was present at low density within the survey area, however the protected habitat 'reef' was not observed. No other sensitive habitats or species were observed.
Seabed	The Helvellyn infrastructure is situated in an area of seabed mainly of coarse sand and gravels with sand ripples. Analysis of the sediment samples taken during the 2022 pre-decommissioning survey found that four stations conformed to Folk classifications of 'Sandy gravel', one station as 'Gravelly sand' and one station as 'Gravel'. The Total Organic Carbon values across the survey stations were low and typical of this region of the SNS. Total Hydrocarbon Content (THC) values exceeded the SNS mean background concentration at all stations, however, all THC values were below the OSPAR 50 ppm ecological effects threshold. Total 2 to 6 ring polycyclic aromatic hydrocarbon concentrations were also above the SNS mean background concentration at all stations. Analysis indicated a mixed input of petrogenic and pyrolytic sources of the aromatic material present, however, there was no evidence of drilling fluids in the gas chromatographic profiles. The majority of bioavailable metals were comparable to, or slightly higher than, their respective SNS mean background concentrations, although there was no relationship between metals concentrations and distance from the subsea well. All metals concentrations were below their respective effects range low values and therefore unlikely to cause adverse effects on the macrofaunal communities present. Sediment macrofauna was dominated by annelids and arthropods typical of coarse sediments. The most abundant taxa recorded were the annelids <i>Sabellaria spinulosa</i> , <i>Phyllodoce maculata</i> , <i>Syllis garciai</i> and <i>Ophelia borealis</i> and the arthropods <i>Urothoe marina</i> and <i>Ampelisca spinipes</i> .
Fish	Species likely to spawn within the vicinity of the Helvellyn infrastructure include cod, herring, lemon sole, plaice (high intensity), sandeels, sole and sprat. Helvellyn is also located within a likely nursery ground for cod, herring, horse mackerel, lemon sole, mackerel, plaice, sandeels, sole, sprat and whiting. Additionally, age 0 group fish are defined as fish in the first year of their lives and can also be classified as juvenile. The Helvellyn infrastructure is located in an area of moderate probability of 0 group aggregations of sprat, plaice, horse mackerel and herring in the vicinity of the blocks of interest, and a low probability of 0 group aggregations of whiting, sole, Norway pout, mackerel, hake, haddock, cod, blue whiting and anglerfish.

Fisheries	<p>The Helvellyn infrastructure is located within ICES Rectangles 36F0. Fishing effort is relatively high in ICES Rectangle 36F0, which is an area targeted by both UK and international vessels. Annual fishing effort between 2017 and 2021 was 2,737 days in ICES Rectangle 36F0, with effort highest between May and November (peaking in July and August). The most frequently used gear type is trawls, traps and dredges. Shellfish species are predominantly targeted, including crabs, lobsters, scallop and whelks. The mean total fish landings (by weight) between 2017 and 2021 were 3,674 tonnes, with a mean value of £11,610,074.</p>
Marine Mammals	<p>Harbour porpoise and white-beaked dolphin are considered to be regularly occurring in the SNS and both species have been observed in the vicinity of the Helvellyn area. Minke whale is also a frequent seasonal visitor. Additionally, common dolphin, white-sided dolphin and bottlenose dolphin have been observed in the vicinity of the Helvellyn infrastructure. The distribution of grey seal in the vicinity of the Helvellyn infrastructure is moderate (< 50 individuals per 25 km²) and the distribution of harbour seal is low (< 5 individual per 25 km²).</p>
Birds	<p>The offshore waters of the SNS are visited by seabirds, mainly for feeding purposes in and around the shallow sandbanks. The most abundant species of seabird predicted to be present in the vicinity of the Helvellyn infrastructure are kittiwake in the breeding season, guillemot, kittiwake, great black-backed gull and herring gull over winter, and guillemot during the post breeding dispersal period.</p> <p>The Helvellyn infrastructure is located adjacent to a number of Special Protection Areas (SPAs), the closest of which is the Greater Wash SPA, located approximately 29 km to the south-west. The site protects important foraging areas of red-throated diver, common scoter and little gull during the non-breeding season, and Sandwich tern, common tern and little tern during the breeding season.</p> <p>An assessment of the medium seabird sensitivity to oil pollution scores for the Helvellyn location, indicates that sensitivity is generally low between April and July, medium to extremely high between August and December, and very high to medium between January and March.</p>
Onshore Communities	<p>Onshore communities are potentially sensitive to disturbance from cleaning, dismantling and disposal activities. Appropriate licenced sites will be selected. Facility chosen by removal contractor must demonstrate proven disposal track record and waste stream management throughout the deconstruction process and demonstrate their ability to deliver re-use and recycling options.</p>
Other Users of the Sea	<p>Shipping activity is high in the vicinity of the Helvellyn infrastructure.</p> <p>The Helvellyn infrastructure is located within a mature gas province with a comprehensive network of typically unmanned installations, larger processing hubs and associated interfield and export pipelines. A number of nearby installations are currently being decommissioned.</p> <p>The nearest offshore windfarm to the Helvellyn infrastructure is the Tritan Knoll wind farm (under construction), located 10 km south of the Amethyst A2D platform. The nearest active wind farm is the Humber Gateway windfarm, which is located 30 km west of the Helvellyn infrastructure. The active Hornsea Project 1 and the Hornsea Project 2 wind farm export cables are located approximately 400 m and 700 m south of the Amethyst A2D platform respectively.</p> <p>The Helvellyn area overlaps with a Ministry of Defence Royal Airforce Practice and Exercise Area.</p>
Atmosphere	<p>Atmospheric emissions will be produced during the proposed Helvellyn decommissioning activities as a result of the fuel consumed by offshore vessels, diesel-powered equipment and generators. It is predicted that these emissions will only result in localised and short term impacts on air quality, with prevailing metocean conditions expected to lead to the rapid dispersion and dilution of the emissions. The contribution to UKCS and global atmospheric emissions will be negligible.</p>

4.2 Potential Environmental Impacts and their Management

An initial screening of the potential impacts to environmental and societal receptors from the proposed Helvellyn decommissioning activities concluded that the only aspects considered to be potentially significant and therefore requiring further assessment were physical presence, seabed disturbance and underwater noise. However, following further assessment and upon implementation of the identified mitigation measures, the Environmental Appraisal report concluded that no significant residual effects are predicted to occur as a result of the proposed Helvellyn decommissioning activities, with the majority of impacts being localised and temporary in nature.

Environmental Impact Assessment Summary:

Table 4.2: Environmental Impact Management		
Activity	Main Impacts	Management
Subsea Installation Removal	<p>Seabed disturbance from removal of WHPS, wellhead and xmas tree, including temporary wet storage of the protection cover resulting in direct physical effects on benthic fauna. This may include mortality as a result of physical trauma and smothering by resuspension and settlement of natural seabed sediments. However, the majority of seabed species recorded from the area are known to have short lifespans (a few years or less) and relatively high reproductive rates, indicating the potential for rapid population recovery. Although the work will be taking place within the Holderness Offshore MCZ, the temporary seabed disturbance caused by removal of the subsea installation will not change the structure, function, quality, or the composition of biological communities present within the seabed sediments. Therefore, in view of the conservation objectives of the MCZ, no likely significant effects are predicted. Removal of the subsea installation will also facilitate the restoration of the seabed back to its natural state.</p> <p>Underwater noise generated from vessel operations (e.g. use of propellers / dynamic positioning thrusters) has the potential to result in behavioural disturbance to marine mammals and fish. However, the area of disturbance will be localised and any impacts will be temporary in nature and not significant, particularly relative to the underwater noise generated by existing levels of vessel traffic in the wider SNS area.</p> <p>The vessels required for the removal of the WHPS will be present on location within the existing 500m safety exclusion zone surrounding the Helvellyn well. This zone is clearly marked on navigation charts and has been in place for a number of years. Once the Helvellyn WHPS has been removed, the 500m safety exclusion zone</p>	<p>Working areas will be minimised, as far as practicable.</p> <p>Where vessels are required to hold position for only short duration, dynamic positioning vessels will be used in favour of moored vessels.</p> <p>Operations will be planned to reduce vessel movements and minimise the overall duration of the project.</p> <p>Where required, Consent to Locate permits will be in place, existing collision risk management plans will be reviewed and notifications of the proposed decommissioning activities will be made to regular users of the area via Notices to Mariners, NAVTEX/NAVAREA warnings and Kingfisher bulletins.</p> <p>To minimise disturbance within the Greater Wash SPA, WPRL proposes to restrict, to the extent possible, vessel movements within the SPA to existing navigation routes when transiting to / from the Helvellyn location, maintain direct transit routes, avoid over-revving of engines, brief vessel crew on the purpose and implications of vessel management practices within the Greater Wash SPA.</p> <p>A post-decommissioning survey will be undertaken around the Helvellyn subsea well where decommissioning activities have taken place to identify and recover any oil and gas seabed debris and confirm the seabed has no trawling obstructions.</p>

	<p>surrounding the well will be withdrawn. This will result in a positive impact as an area of ca. 0.79km² will be made available to other sea users.</p>	
<p>Decommissioning of pipeline, umbilical and associated stabilisation features</p>	<p>There will be some seabed disturbance from cutting of pipeline ends, removal of exposed pipeline sections / tie-in spools, including mattresses and gravel bags at the approaches to the Helvellyn WHPS and Amethyst A2D platform and redeployment of mattresses to protect the cut ends of the pipelines, if exposed at the seabed. The seabed may also be disturbed if exposed anode sled sections are observed and need to be cut and removed. Physical disturbance of the seabed can cause displacement or mortality of benthic species, such as sessile organisms, that are unable to move out of the impacted area. However, due to the transient nature of the operations, it is expected that recovery of the affected areas will be relatively rapid once the proposed activities have been completed.</p> <p>Retrieval of mattresses and gravel bags at the approaches to the Helvellyn well and Amethyst A2D platform will result in hard / coarse substratum habitats being replaced by sediment habitats, more typical of this area of the SNS. As a result, there will be localised changes in benthic communities from epifaunal species that can colonise hard substrata to those that favour of soft sandy sediments.</p> <p>There will also be a legacy impact from the stabilisation material which will be decommissioned in situ, including the redeployment of any material required to protect the cut ends of the pipelines, if required. The hard substrate represents a permanent change to the natural habitat type and associated fauna present; however, the scale of the impact is negligible considering coarse sand and gravel are typical of this part of the SNS.</p> <p>Mechanical (shear or diamond wire) cutters will be used to sever the Helvellyn pipeline and umbilical. Although cutting tools produce underwater noise emissions, the level of noise produced is very unlikely to cause significant disturbance to marine fauna.</p> <p>There is a risk of fishing gear snagging on infrastructure that is being decommissioned in situ, particularly in the event free spans were to develop along the route of the pipelines. However, the full length of pipeline and umbilical are currently buried to a depth well in excess of 0.6m, excluding the approaches at the subsea well and platform ends. The interim operational general inspection surveys conducted in 2013 and 2015 show a stable trench with natural backfill seen throughout the</p>	<p>Working areas will be minimised, as far as practicable.</p> <p>Internal cutting techniques will be utilised where possible, which do not produce any significant noise emissions. Where internal cuts are not possible, external cuts will be via mechanical methods as they produce significantly less noise than of abrasive methods.</p> <p>No new mattresses, gravel bags or rock dump will be placed on the seabed.</p> <p>Details of any infrastructure decommissioned in situ will be publicised through Notices to Mariners and marked on navigation and fisheries charts.</p> <p>A post-decommissioning survey will be undertaken along the route of the pipeline and umbilical where decommissioning activities have taken place to identify and recover any oil and gas seabed debris and confirm the seabed has no trawling obstructions.</p> <p>A post-decommissioning monitoring programme covering the pipeline, umbilical and associated stabilisation features remaining in situ will be agreed with OPRED.</p>

	<p>route when compared with the original 2002 as trenched surveys. The recent 2022 surveys have further confirmed the gradual trench infill and seabed stability. No significant migration of the seabed has been recorded during this period. The rock which has been deposited along the pipelines is very stable and there has been no migration due to seabed currents or fishing activity over the area. As the pipeline and piggybacked umbilical will be left in situ in a flooded condition no upward movement is expected. Additionally, of the four anode sleds present, three are fully buried, and rock dumped or buried under natural material, while the third is only marginally exposed. If any anode sleds are seen on the seabed surface during the offshore decommissioning campaign these will be cut and removed, if possible, to prevent them becoming a snagging risk. As such, the residual risk to commercial fishing from the legacy of infrastructure decommissioned in situ is not considered to be significant.</p>	
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5. INTERESTED PARTY CONSULTATIONS

Consultations Summary:

Table 5.1: Summary of Stakeholder Comments		
Who	Comment	Response
Statutory Consultations		
National Federation of Fishermen's Organisations	<p>NFFO's view on non-intrusive post decom surveys is that they prefer full over trawl trials with bottom gear only (no nets involved so no risk of damage to nets). This is not in agreement with JNCC's view and ongoing discussions with JNCC/ OPRED are continuing. Some incidents of post decom snagging after non-intrusive surveys have been noted.</p> <p>Fishing activity on the shoulder of the glacial channel running parallel to Helvellyn pipeline and umbilical is mainly static gear. Pipelines left in situ unlikely to cause any issues.</p> <p>NFFO view is that rock dump can be left in place as higher %age of fishing activity is with static gear that is not impacted by rock dump.</p>	<p>Final seabed clearance verification methodology to be agreed with OPRED.</p> <p>Helvellyn decom will provide greater area available to fishing industry.</p> <p>NFFO have been involved in the CA process.</p>
Scottish Fishermen's Federation	SFF have been consulted and are content given the geographical location of Helvellyn to let NFFO consult with regards to any fishing interaction with the decommissioning activities.	N/A
Northern Irish Fish Producer's Organisation Limited	Have been consulted and are content given the geographical location of Helvellyn to let NFFO consult with regards to any fishing interaction with the decommissioning activities.	N/A
Global Marine Group	GMG have confirmed there are no cables within 50km of the decommissioning works.	
Informal Stakeholder Consultations		
Joint Nature Conservation Committee	Stated that they see the Helvellyn decommissioning project as a potential net benefit project in terms of benthic impacts.	WPRL confirmed that the Helvellyn route survey has been completed in 2022 and will have further route surveys on completion of the decommissioning. The benefit and need for any further surveys after

	<p>Would like to understand the frequency of pipeline surveys that will take place before and after decommissioning.</p> <p>Had concerns about the camera drops along the pipeline and if there were enough. JNCC suggested that photos may be better than grab samples and will be available sooner. Suggest considering going for more photos. JNCC would like to see more details of the rock berms along the pipeline and what the fishing industry's opinions of them are.</p> <p>Would like to see the survey data being used to avoid an over trawl survey later on, whereas the fishing industry may argue for it.</p> <p>JNCC would like include an assessment of the Greater Wash SPA in the CA process. Suggesting to include the Red Throated Diver bird in the ES and considerations for observing best practise in that respect e.g. directing marine traffic to use the defined shipping lanes as much as possible to avoid disruption.</p>	<p>this are yet to be agreed with OPRED. A pre decommissioning environmental survey is being performed in 2022.</p> <p>Final seabed clearance verification methodology to be agreed with OPRED.</p> <p>Red-throated diver are most at risk of disturbance if vessels were transiting to / from Hull, Great Yarmouth or Lowestoft. Therefore, to minimise disturbance, WPRL proposes to implement the following mitigation measures:</p> <ul style="list-style-type: none"> • Restricting, to the extent possible, vessel movements within the Greater Wash SPA to existing navigation routes when transiting to / from the Helvellyn location; • Maintaining direct transit routes; • Avoiding over-revving of engines; • Briefing vessel crew on the purpose and implications of vessel management practices within the Greater Wash SPA. <p>JNCC have been involved in the CA process.</p>
Public	Public notice issued in the press and on the WPRL website.	No Public comments received.

6. PROGRAMME MANAGEMENT

6.1 Project Management and Verification

An WPRL Project Management team will manage suitable Contractors for decommissioning activities and the removal of the subsea installation. The team will ensure the decommissioning is executed safely, in accordance with legislation and WPRL Health and Safety principles. Where possible the work will be coordinated with other decommissioning operations in the SNS. The 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

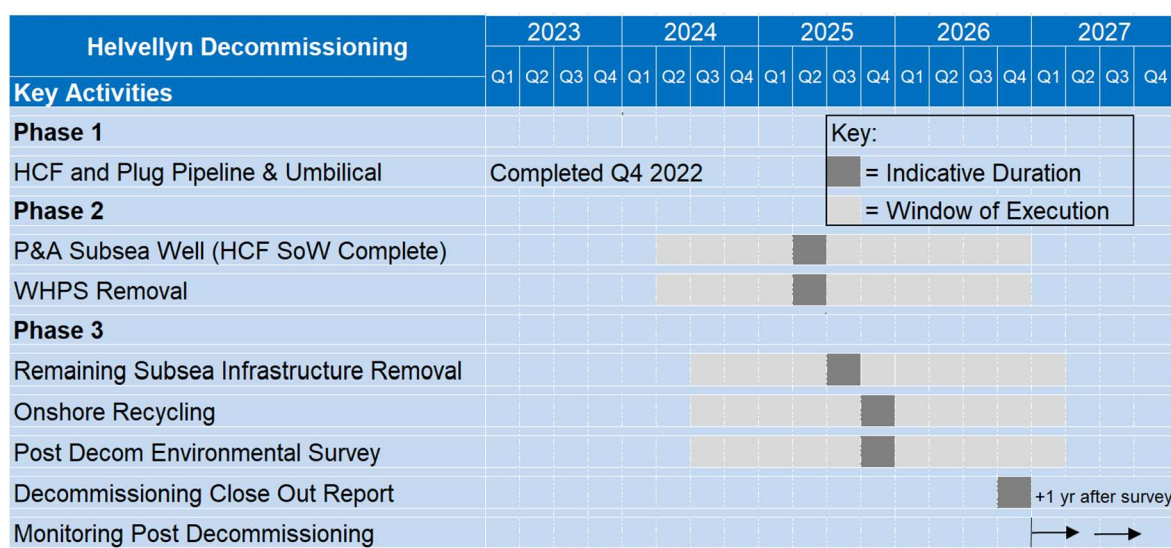
A post decommissioning site survey will be carried out within a 500m radius of the former Helvellyn installation site and a (*minimum*) 100m corridor (*50m either side*) along the existing pipeline and umbilical route where decommissioning activities have taken place to identify any oil and gas debris. Any seabed debris related to offshore oil and gas activities will be recovered for onshore disposal or recycling in line with existing disposal methods.

Verification of seabed clearance will be provided to OPRED following decommissioning activities. If non-intrusive methods are deemed inconclusive during verification alternative methods will be discussed and agreed with OPRED. Results will be included in the Close Out Report and sent to the Seabed Data Centre (*Offshore Installations*) at the Hydrographic Office.

6.3 Schedule

The Project Plan is subject to approval of the decommissioning programmes and unavoidable constraints such as Contractor availability. OPRED will be informed of dates of activity in advance, when known.

Figure 6.1: Project Plan



Note: Indicative plan, the activity window is subject to tender award and synergies with other operations for cost savings.

6.4 Costs

Decommissioning costs are provided separately to OPRED and NSTA.

Table 6.1: Provisional Decommissioning Programmes costs	
Item	Estimated Cost (£m)
Project Management	Provided to OPRED & NSTA
Facility Running/Owner	Provided to OPRED & NSTA
Well Abandonment (<i>subsea</i>)	Provided to OPRED & NSTA
Making Safe	Provided to OPRED & NSTA
Substructure Removal	Provided to OPRED & NSTA
Subsea Infrastructure	Provided to OPRED & NSTA
Onshore Recycling and Disposal	Provided to OPRED & NSTA
Site Remediation	Provided to OPRED & NSTA
Monitoring	Provided to OPRED & NSTA
TOTAL	Provided to OPRED & NSTA

6.5 Close Out

In accordance with the OPRED guidelines, a close out report will be submitted to OPRED within 1 year of the completion of the offshore decommissioning scope including debris clearance, verification of seabed clearance and the results of the post-decommissioning environmental survey. The report will detail the outcomes of surveys as well as explain any major variances from the programme.

6.6 Post-Decommissioning Monitoring and Evaluation

A post-decommissioning environmental seabed survey will be carried out around the former subsea installation location and pipeline and umbilical route by WPRL where decommissioning activities have taken place. The survey report will be reviewed, compared with the pre-decommissioning survey, and a risk-based post monitoring survey regime will be proposed by WPRL which will be agreed with OPRED.

7. SUPPORTING DOCUMENTS

Table 7.1: Supporting Documents	
Document Number	Title
APR_HV_PMGT_005	Helvellyn Pipeline and Umbilical Decommissioning Options Comparative Assessment
APR_HV_PMGT_008	Helvellyn Environmental Appraisal Report

8. S29 HOLDER LETTERS OF SUPPORT



Waldorf Energy Partners Limited
40 Queens Road
Aberdeen AB15 4YE
T: +44 (0) 1224 202850

**Offshore Petroleum Regulator for
Environment & Decommissioning**
Department for Energy Security & Net Zero
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

4 January 2024

Dear Sir / Madam

HELVELLYN DECOMMISSIONING PROGRAMMES PETROLEUM ACT 1998

We acknowledge receipt of your letters dated 5 December 2023.

We, Waldorf Energy Partners Limited, confirm that we authorise Waldorf Petroleum Resources Limited to submit on our behalf an abandonment programme relating to the abandonment of the Helvellyn field facilities as directed by the Secretary of State on 5 December 2023.

We confirm that we support the proposals detailed in the Helvellyn Decommissioning Programmes dated 4 January 2024, which is to be submitted by Waldorf Petroleum Resources Limited in so far as they relate to those facilities in respect of which we are required to submit an abandonment programme under section 29 of the Petroleum Act 1998.

Yours faithfully

DocuSigned by:

D8B2FFBA70C547E...

Erik Brodahl
Director
For and on behalf of Waldorf Energy Partners Limited

Alpha Petroleum (UK) Holdings Limited

Administration Office Address
4th Floor,
St. Paul's Gate,
22-24 New Street,
St. Helier,
Jersey JE1 4TR
Channel Islands

Tel: 44 (0)1534 504700
Fax: 44 (0)1534 504701

**Offshore Petroleum Regulator for
Environment & Decommissioning**
Department for Energy Security & Net Zero
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

4 January 2024

Dear Sir / Madam

HELVELLYN DECOMMISSIONING PROGRAMMES PETROLEUM ACT 1998

We acknowledge receipt of your letters dated 5 December 2023.

We, Alpha Petroleum (UK) Holdings Limited, confirm that we authorise Waldorf Petroleum Resources Limited to submit on our behalf an abandonment programme relating to the abandonment of the Helvellyn field facilities as directed by the Secretary of State on 5 December 2023.

We confirm that we support the proposals detailed in the Helvellyn Decommissioning Programmes dated 4 January 2024, which is to be submitted by Waldorf Petroleum Resources Limited in so far as they relate to those facilities in respect of which we are required to submit an abandonment programme under section 29 of the Petroleum Act 1998.

Yours faithfully



Paul Woodman
Director
For and on behalf of Alpha Petroleum (UK) Holdings Limited

9. APPENDIX

9.1 COPY OF PUBLIC NOTICE

PUBLIC NOTICE PETROLEUM ACT 1998

Helvellyn Decommissioning Programmes

Waldorf Petroleum Resources Limited has submitted, for the consideration of the Secretary of State for Department for Energy Security and Net Zero, draft combined Decommissioning Programmes for the removal of the Helvellyn subsea installation and the decommissioning of pipelines 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 Helvellyn facility covered by the combined Decommissioning Programmes is in block 47/10a, 48 km east of the Spurn Point on the East Riding of Yorkshire coast / Dimlington Gas Terminal and 136 km southwest of the UK / Netherlands median line. It comprises of a single subsea well 47/10-7y, which is completed with a subsea production xmas tree, protected by a Wellhead Protection Structure. An 8" pipeline (PL1956) and 2" umbilical (PLU1957) run parallel 15.7km to a host platform.

Waldorf Petroleum Resources Limited hereby gives notice that a summary of the Helvellyn combined Decommissioning Programmes can be viewed at: <https://www.waldorf-production.com/decommissioning>

Should you require a hard copy of the decommissioning programme for review, please contact:

Waldorf Petroleum Resources Limited
40 Queens Road
Aberdeen
AB15 4YE
Email: decom@waldorf-production.com

Representations regarding the Helvellyn combined Decommissioning Programmes should be submitted in writing using the contact details above (preferably by email) where they must be received by 15th September 2023 and should state the grounds upon which any representations are being made.