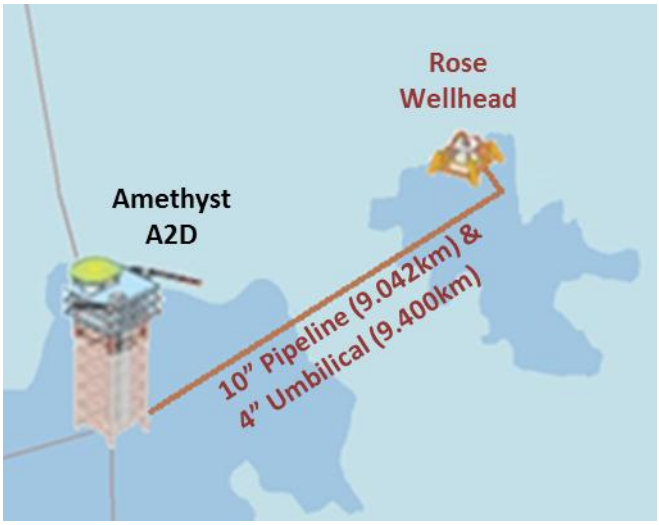
centrica energy

Rose Decommissioning Programmes



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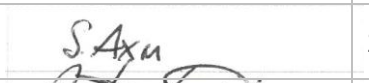
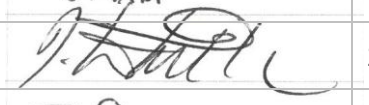
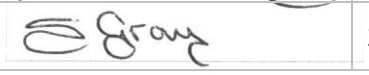
Prepared by:	S. Axon		15/05/15
Reviewed by:	I. Whitehead		15/05/15
Approved by:	S. Gray		15/05/15

REVISION RECORD

Revision No.	Date of Revision	Reason
A1	19/12/14	Issued for Review and Comment
A2	27/02/15	Updated & re-issued for review and comment
A3	12/03/15	Issued for Approval
A4	24/03/15	Issued for Consultation
A5	12/05/15	Issued for DECC for final review
A6	13/05/15	Draft
C1	15/05/15	FINAL VERSION

TERMS AND ABBREVIATIONS

ABBREVIATION	EXPLANATION
A2D platform	Amethyst A2D platform
CA	Comparative Assessment
Centrica	Centrica Resources Limited
COP	Cessation of Production
DECC	Department of Energy & Climate Change
DSV	Diving Support Vessel
EIA	Environmental Impact Assessment
HSE	Health and Safety Executive
HV	High Voltage
“	Inch, 25.4millimetres
km	Kilometre
LSA	Low Specific Activity
MAT	Master Application Template
N,S,E,W	North, South, East, West
N/A	Not Applicable
NB	Nominal bore
NFFO	National Federation of Fishermen's Organisations
NIFF	Northern Ireland Fishermen’s Federation
NORM	Naturally Occurring Radioactive Material
NUI	Normally Unattended Installation
OSPAR	Oslo Paris Convention
P&A	Plug and Abandonment
PON	Petroleum Operations Notice
PP	Polypropylene
PWA	Pipeline Works Authorisation
rMCZ	Recommended Marine Conservation Zone
SAT	Subsidiary Application Template
SFF	Scottish Fisherman’s Federation
SUTU	Subsea Umbilical Termination Unit
TBA	To Be Arranged
TUTU	Topsides Umbilical Termination Unit
WGS84	World Geodetic System 1984
WHPS	Wellhead Protection Structure

FIGURES AND TABLES

TABLE OF APPENDICES

1. EXECUTIVE SUMMARY

1.1 Combined Decommissioning Programmes

This document contains two Decommissioning Programmes, one for each set of notices under Section 29 of the Petroleum Act 1998. The Decommissioning Programmes are:

- The Rose installation (a wellhead protection structure); and,
- The associated pipeline and umbilical.

Although decommissioning of the Rose installation and pipelines is being treated as a standalone project we will continue to explore cost saving synergies with other projects.

1.2 Requirement for Decommissioning Programmes

Installation: In accordance with the Petroleum Act 1998, Centrica Resources Limited (Centrica) as operator of the Rose field, and also as the Section 29 notice holder (see Table 1.2), is applying to the Department of Energy and Climate Change (DECC) to obtain approval for decommissioning the subsea installation detailed in Section 2 of this programme.

Pipelines: In accordance with the Petroleum Act 1998, Centrica as operator of the Rose pipelines, and also as the Section 29 notice holder (see Table 1.4), is applying to the DECC to obtain approval for decommissioning the pipelines detailed in Section 2 of this document.

In conjunction with public, stakeholder and regulatory consultation, the Decommissioning Programmes are submitted in compliance with national and international regulations and the DECC guidelines. The schedule outlined in this document is for a two year decommissioning plan due to begin in 2015.

1.3 Introduction

The Rose field (block 47/15), wholly owned by Centrica, comprises a single subsea well (47/15b-6W) tied back to the Perenco operated A2D platform via a 9.042km long, 10” nominal bore pipeline. Methanol supply and control of the tree at Rose is by means of a 9.400km long nominal 4” diameter umbilical from the A2D platform. First gas was achieved in 2004. The final version of the report justifying COP has been submitted to DECC.

The well is currently live but not producing and is scheduled for plug and abandonment in 2015.

Following public, stakeholder and regulatory consultation, the Decommissioning Programmes will be submitted in full compliance with the DECC guidelines. The Decommissioning Programmes explain the principles of the removal activities and are supported by an environmental impact assessment. The Decommissioning Programme for the pipeline and umbilical is supported by a comparative assessment.

1.4 Overview of Installation/Pipelines Being Decommissioned

1.4.1 Installation

Table 1.1: Installation Being Decommissioned			
Field name		**Quad/Block**	
Rose		47/15b	
Surface Installations		**Subsea Installations**	
Total Number	Type	Total Number	Type
None	n/a	1	WHPS
Number of Wells		**Drill Cuttings Piles**	
Platform	Subsea	Number of Piles	Total Est volume (m^3)
None	1	None	n/a
Production Type *(Oil/Gas/Condensate)*	**Water Depth (m)**	**Distance from nearest UK coastline (km)**	**Distance to Median Line (if less than 5km)**
Gas	Approx. 24m	54km	n/a

Table 1.2: Installation Section 29 Notice Holders Details		
Section 29 Notice Holder	**Registration Number**	**Equity Interest (%)**
Centrica Resources Limited	02855151	100

1.4.2 Pipelines

Table 1.3: Pipelines Being Decommissioned		
Number of Pipelines / Umbilicals	2	(See Table 2.3)

Table 1.4: Pipelines Section 29 Notice Holders Details		
Section 29 Notice Holder	**Registration Number**	**Equity Interest (%)**
Centrica Resources Limited	02855151	100

1.5 Summary of Proposed Decommissioning Programmes

Table 1.5: Summary of Decommissioning Programmes		
Selected Option	**Reason for Selection**	**Proposed Decommissioning Solution**
1. Topsides		
n/a		
2. Jacket/Floating Facility (FPSO etc.)		
n/a		
3. Subsea Installation		
Wellhead Protection Structure (WHPS) will be removed.	To remove all seabed structures and leave a clean seabed. To comply with OSPAR requirements.	WHPS will be removed from the seabed.
4. Pipeline, Flowline & Umbilical		
Pipeline will be flushed and left buried *in situ*. Umbilical will be flushed and left buried *in situ*.	The pipeline is sufficiently buried and stable, posing no hazard to marine users. Minimal seabed disturbance, lower energy usage, reduced risk to personnel engaged in the activity. The umbilical and its ballast wire are sufficiently buried and stable, posing no hazard to marine users. Minimal seabed disturbance, lower energy usage, less risk to personnel engaged in the activity. The mattresses are not visible at their specified locations. This would suggest that the mattresses have become buried.	The 10" NB pipeline, the 4" umbilical and its associated 36mm steel ballast wire will be left *in situ* with the ends excavated locally to the cut location to ensure that the ends remain buried. Surveys indicate that both the pipeline and umbilical will remain buried with flooding. Degradation will occur over a long period within the seabed sediment, not expected to represent a hazard to other users of the sea. The four buried mattresses will be left *in situ*; they are not expected to present a hazard to other users of the sea. The pipeline riser, J-tube and 30" caisson will remain with the A2D platform. Emplaced rock will remain *in situ* on the pipeline.
5. Well		
Well will be plugged and abandoned to comply with HSE "Offshore Installations and Wells (Design and Construction, etc.) Regulations 1996" and in accordance with Oil & Gas UK Guidelines for the Suspension and Abandonment of Wells.	Meets the DECC and HSE regulatory requirements.	The Rose well will be plugged and abandoned using a drilling rig. A Master Application Template (MAT) and the supporting Subsidiary Application Template (SAT) will be submitted in support of activities carried out. A PON5 will also be submitted to the DECC for application to abandon the well.
6. Drill Cuttings		
No cuttings pile exists at Rose.	Cuttings are widely dispersed and fall below OSPAR 2006/5 thresholds.	n/a
7. Interdependencies		
Mattresses (excluding the four mattresses midline on the umbilical to remain *in situ*) and grout bags will be removed as part of the pipeline and umbilical removal activities. Rose is tied into the A2D platform.		

1.6 Field Location including Field Layout and Adjacent Facilities

Figure 1.1: Rose Field Location in UKCS

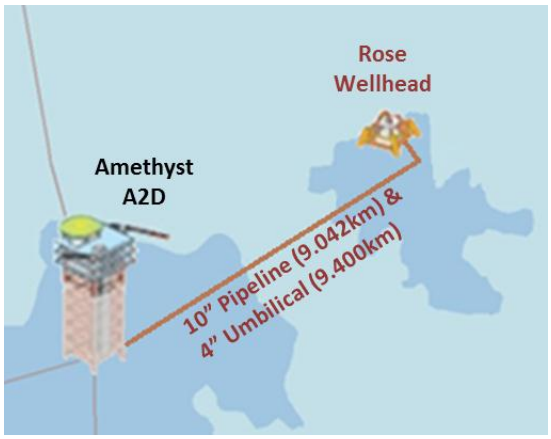


Figure 1.2:Rose Field Layout in UKCS

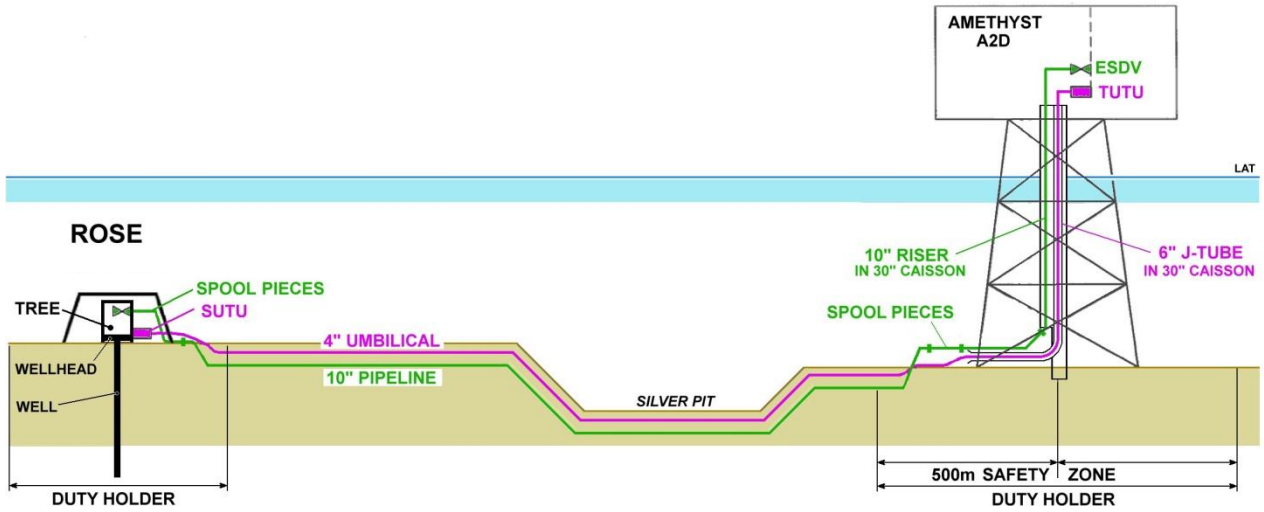


Figure 1.3: Rose Field PWA Limits

Table 1.6: Adjacent Facilities					
Owner	**Name**	**Type**	**Distance/ Direction**	**Information**	**Status**
Perenco	Amethyst A2D	Platform (NUI)	Reception for Rose pipeline, 9.2km, West of Rose well WGS84 Decimal: 53.622447 0.789108 WGS84 Dec Min: 53° 37.347' N 00° 47.346' E	Host platform for various subsea gas tiebacks. Exports gas and condensate to Easington (onshore).	Operational
Alpha Petroleum	Helvellyn	Subsea Well	8.4km, North of Rose WGS84 Decimal: 53.730895 0.843729 WGS84 Dec Min: 53° 43.854' N 00° 50.624' E	Gas	Operational
Alpha Petroleum	PL1956 PLU1957	8" gas pipeline and piggybacked umbilical	Helvellyn to A2D (15.5km long) WGS84 Decimal: 53.622447 0.789108 WGS84 Dec Min: 53° 37.347' N 00° 47.346' E	Gas	Operational
Perenco	Amethyst A1D	Platform (NUI)	13.6km, West of Rose WGS84 Decimal: 53.610673 0.722594 WGS84 Dec Min: 53° 36.640' N 00° 43.356' E	Gas	Operational
Perenco	Amethyst B1D	Platform (NUI)	11.8km, South of Rose WGS84 Decimal: 53.561003 0.877284 WGS84 Dec Min: 53° 33.660' N 00° 52.637' E	Gas	Operational
Perenco	Amethyst C1D	Platform (NUI)	20.2km, West of Rose WGS84 Decimal: 53.644921 0.602278 WGS84 Dec Min: 53° 38.695' N 00° 36.137' E	Gas	Operational
Perenco	PL775 PL777 Power Cable	10" NB gas pipeline with piggybacked 3" methanol line and power cable	B1D to A2D (12.0km long) WGS84 Decimal: 53.622447 0.789108 WGS84 Dec Min: 53° 37.347' N 00° 47.346' E	Gas	Operational
Perenco	HV Power cable	HV Power cable	A1D to A2D (4.9km long) WGS84 Decimal: 53.622447 0.789108 WGS84 Dec Min: 53° 37.347' N 00° 47.346' E	Gas	Operational
Perenco	PL649 PL650	30" gas export pipeline with piggybacked 3" methanol line	A2D to shore at Easington (47.8km long) WGS84 Decimal: 53.622447 0.789108 WGS84 Dec Min: 53° 37.347' N 00° 47.346' E	Gas	Operational
Impacts of Decommissioning Proposals					
No impact is expected.					

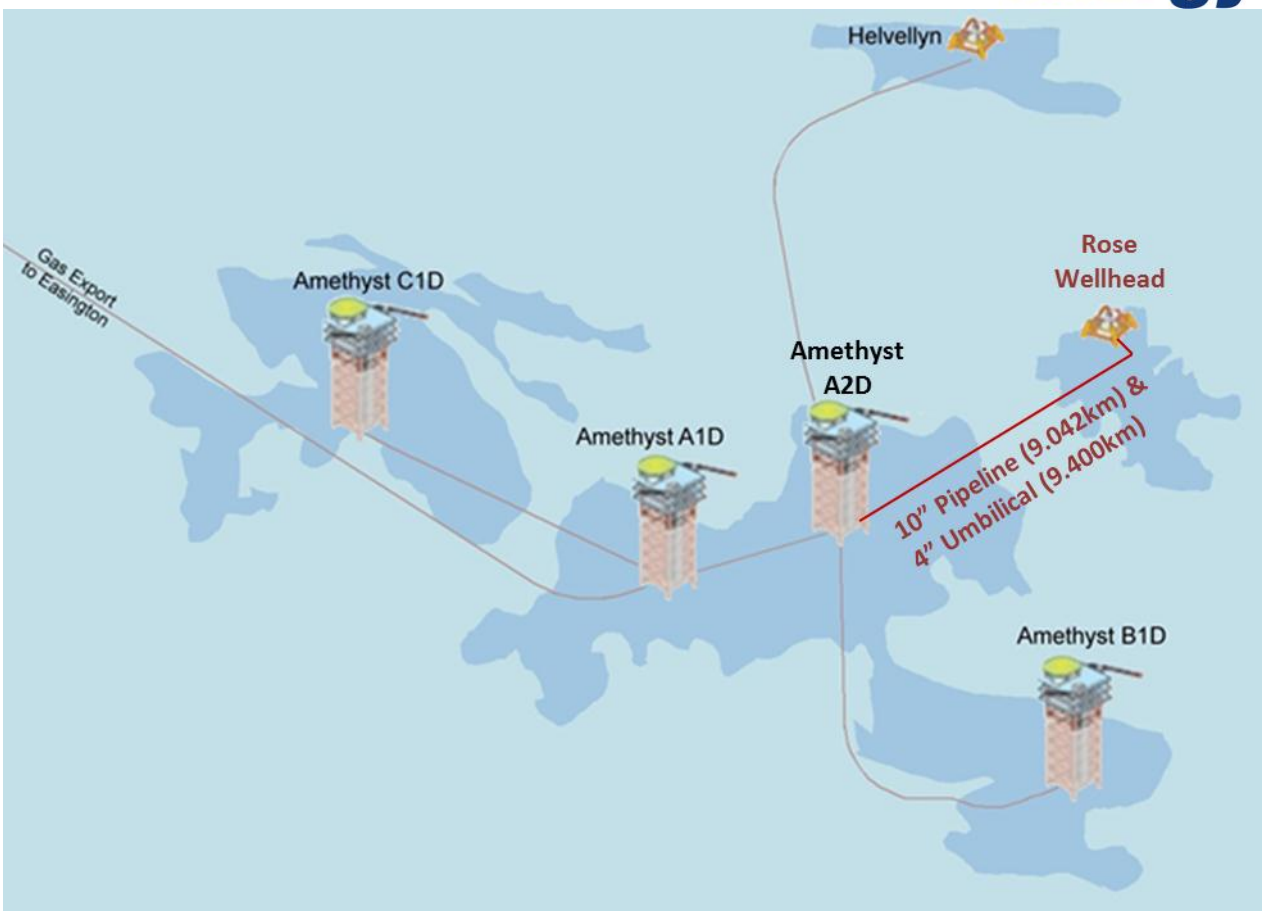


Figure 1.4: Adjacent Facilities

1.7 Industrial Implications

The required activities to decommission the Rose installation and pipelines will be largely completed from a Diving Support Vessel (DSV), while the well plug and abandonment (P&A) will be done using a drilling rig.

It is Centrica's intention to use existing framework agreements for the decommissioning of the pipeline, umbilical and stabilisation features. Centrica will also try to combine Rose decommissioning activities with other development or decommissioning activities should the opportunity arise. A drilling rig is already on charter for a number of well plug and abandonment activities in the southern North Sea and as such it is possible that the sequence of work may change. Therefore, the decommissioning schedule is extended to allow flexibility for when decommissioning operations are carried out and completed.

2. DESCRIPTION OF ITEMS TO BE DECOMMISSIONED

2.1 Installation: Surface Facilities

Table 2.1: Surface Facilities Information								
Name	Facility Type	Location ED50 Format	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 Installation: Subsea including Stabilisation Features

Table 2.2: Subsea Installations and Stabilisation Features					
Subsea installations including Stabilisation Features	Number	Size/ Weight (Te)	Location		Comments/Status
Wellhead	1	10.0	WGS84 Decimal	53.665428 N, 0.906289 E	Well is live and shut in, and will undergo plug and abandonment.
			WGS84 Decimal Minute	53° 39.927' N 0° 54.380' E	
Wellhead Protection Structure	1	33.7	WGS84 Decimal	53.665428 N, 0.906289 E	WHPS is attached to Wellhead and not piled. WHPS will be transported to shore for re-use, unless the condition is found to preclude refurbishment when it will be recycled.
			WGS84 Decimal Minute	53° 39.927' N 0° 54.380' E	
Tree	1	18.2	WGS84 Decimal	53.665428 N, 0.906289 E	Tree is located within the WHPS and will be lifted to shore for re-use, unless the condition is found to preclude refurbishment when it will be recycled.
			WGS84 Decimal Minute	53° 39.927' N 0° 54.380' E	
Concrete Mattresses	n/a				
Grout Bags	n/a				
Formwork	n/a				
Frond Mats	n/a				
Rock Emplacement	n/a				

2.3 Pipelines Including Stabilisation Features

Table 2.3: Pipeline/Flowline/Umbilical Information									
Description	**Pipeline Number (as per PWA)**	**Diameter (NB) (inches)**	**Length (km)**	**Description of Component Parts**	**Product Conveyed**	**From – To End Points**	**Burial Status**	**Pipeline Status**	**Current Content**
Flowline	PL1987	10"	9.042	Carbon Steel with 3 Layer PP	Gas	Rose well spool piece to A2D platform spool piece	Trenched and backfilled (for burial profile please refer to Figure 7.3)	Operational	Hydrocarbon
Spool pieces at Rose wellhead	PL1987	4 x 10” 1 x 8” 1 x 6”	0.088 (approx.)	4 x Carbon Steel with 3 Layer PP 2 x Super Duplex with 3 Layer PP	Gas	Rose wellhead to PL1987	Covered by concrete mattresses, except where under WHPS	Operational	Hydrocarbon
Spool pieces at A2D platform	PL1987	10”	0.097 (approx.)	Carbon Steel with 3 Layer PP	Gas	PL1987 to A2D platform riser	Covered by concrete mattresses, except where under platform jacket	Operational	Hydrocarbon
Rigid riser at A2D platform	PL1987	10”	0.046 (approx.)	Carbon Steel with 3 Layer PP	Gas	End spool piece at A2D platform to topsides	n/a	Operational	Hydrocarbon
Umbilical	PLU1988	Nominal 4" (96.5mm)	9.400	Composite Flexible (Umbilical Ballast, i.e. strapped steel wire for weight)	Chemicals, Control Fluid and Electricity	SUTU at Rose wellhead to A2D platform	Trenched but left to backfill naturally (for burial profile please refer to Figure 7.7)	Operational	Methanol, Corrosion Inhibitor and Hydraulic Fluid

Table 2.4: Subsea Pipeline Stabilisation Features				
Stabilisation Feature	**Total Number**	**Weight (Te)**	**Locations**	**Exposed/Buried/Condition**
Concrete Mattresses	Approx. 116	451	55 within vicinity of Rose wellhead, 57 within 500m exclusion zone of A2D platform, 4 (buried) at locations along the umbilical as shown in Figure 7.7.	Mattresses at A2D platform and Rose wellhead exposed (placed on exposed sections of pipeline/umbilical and rigid spool pieces at Amethyst A2D and Rose wellhead). Mattresses at midline of umbilical buried.
Grout Bags	Approx. 200	5	Located within 500m of Rose and A2D platform as shown in Figure 7.7.	Exposed.
Rock Emplacement	702m	5,547	18 locations along pipeline; dimension of KP is central to length given: KP1.205 39m KP1.348 39m KP1.489 32m KP1.552 39m KP1.653 34m KP1.839 77m KP2.937 34m KP4.328 46m KP4.896 34m KP5.474 40m KP6.024 32m KP6.268 33m KP6.449 42m KP7.236 37m KP8.060 34m KP8.569 33m KP8.696 44m KP8.808 33m	Exposed.

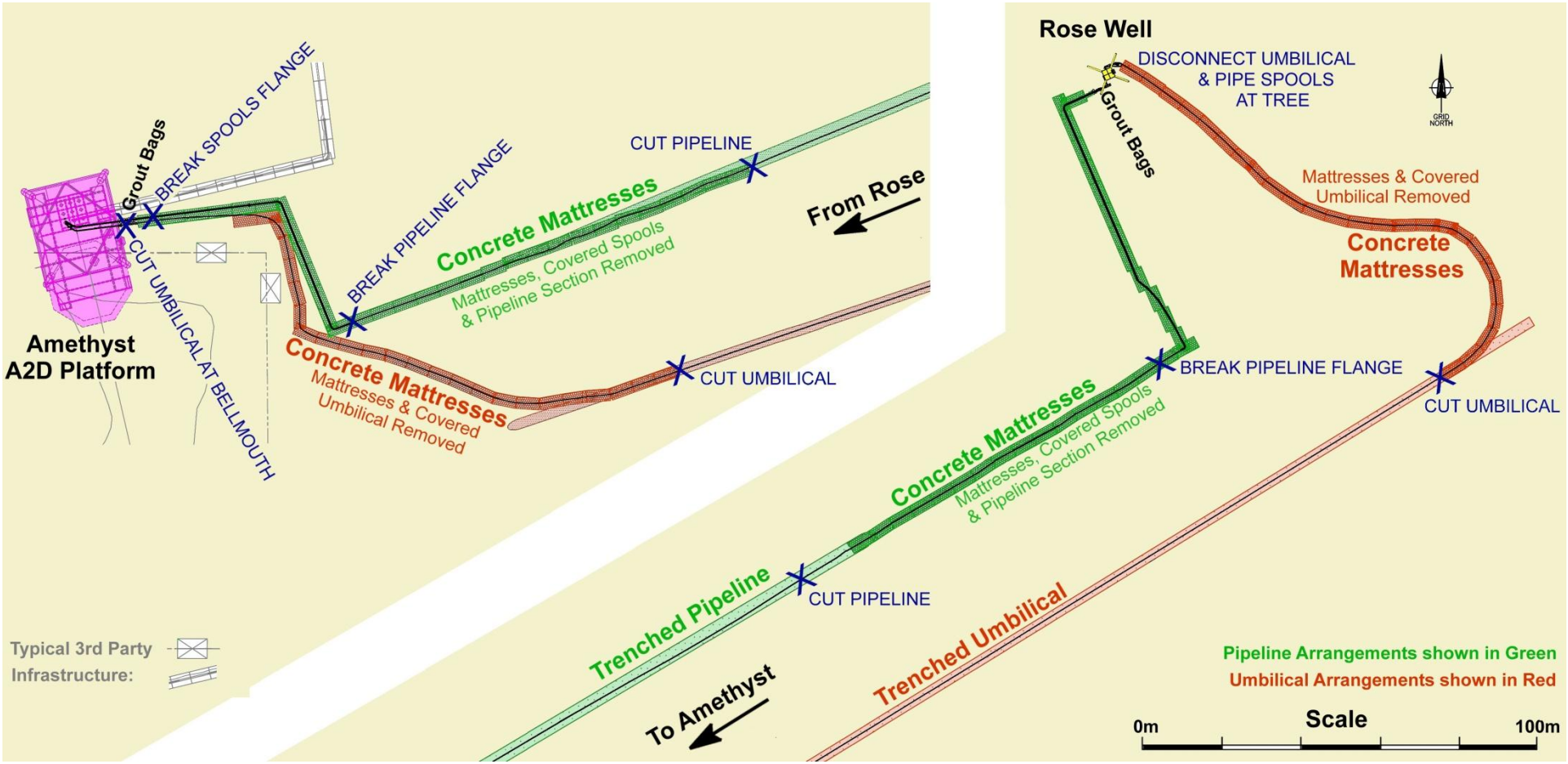


Figure 2.1: Sketch showing Locations of Pipeline and Umbilical Cuts

2.4 Wells

Table 2.5: Well Information			
Platform Wells	**Designation**	**Status**	**Category of Well**
n/a			
Subsea Wells			
47/15b-6W	Gas Production	Live and Shut In	3

For details of well categorisation see the Oil & Gas UK Guidelines for the Suspension or Abandonment of Wells. Issue 4, July 2012.

2.5 Drill Cuttings

(See Section 3.7 for further information)

Table 2.6: Drill Cuttings Pile Information		
Location of Pile Centre (Latitude/Longitude)	**Seabed Area (m^2)**	**Estimated volume of cuttings (m^3)**
No drill cuttings pile exists at Rose. See Section 3 of the Environmental Decommissioning Survey [3] in section 7.	n/a	n/a

2.6 Inventory Estimates

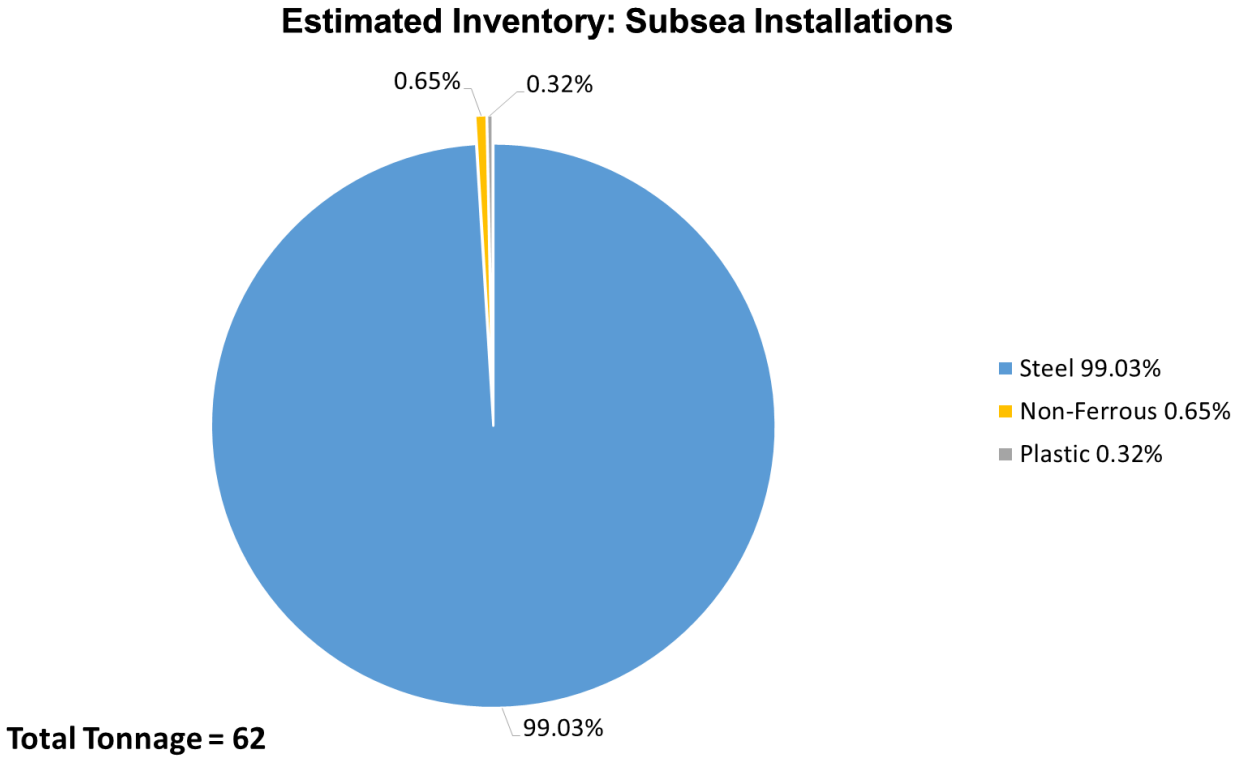


Figure 2.2: Pie Chart of Estimated Inventories (Installations)

Please refer to Section 5.6 of the Environmental Impact Assessment [1] in section 7 for further details.

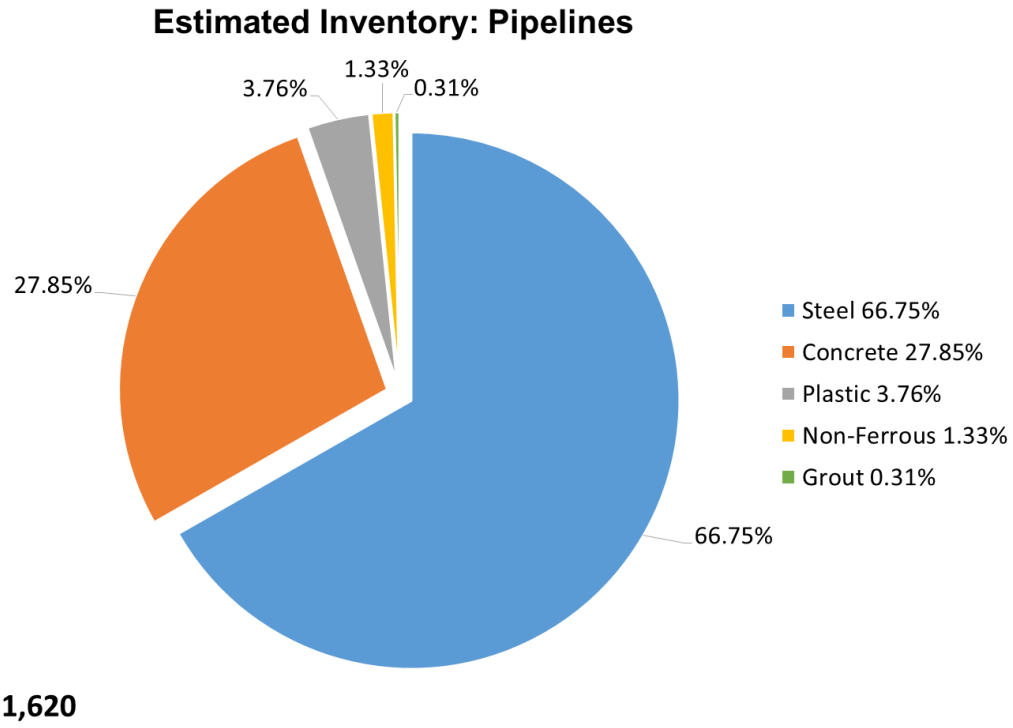


Figure 2.3: Pie Chart of Estimated Inventory (Pipelines)

Please refer to Section 5.6 of the Environmental Impact Assessment [1] in section 7 for further details.

3. REMOVAL AND DISPOSAL METHODS

Wastes generated during decommissioning will be segregated and recorded by type and periodically transported to shore in an auditable manner through licensed waste contractors. Steel and other recyclable metal are estimated to account for the greatest proportion of the materials inventory.

3.1 Topsides

N/A

3.2 Jacket

N/A

3.3 Subsea Installations and Stabilisation Features

Table 3.1: Subsea Installation and Stabilisation Features			
Subsea installation and stabilisation features	**Number**	**Option**	**Disposal Route (if applicable)**
Wellhead	1	Full recovery as part of campaign to P&A wells	Return to shore for re-use, unless the condition is found to preclude refurbishment when it will be recycled.
Manifold	n/a		
Template	n/a		

Table 3.1: Subsea Installation and Stabilisation Features			
Subsea installation and stabilisation features	**Number**	**Option**	**Disposal Route (if applicable)**
Wellhead Protection Structure	1	Full recovery	Return to shore for re-cycling.
Tree	1	Full recovery	Return to shore for re-use, unless the condition is found to preclude refurbishment when it will be recycled.
Concrete Mattresses	n/a		
Grout Bags	n/a		
Formwork	n/a		
Frond Mats	n/a		
Rock Emplacement	n/a		
Other	n/a		

3.4 Pipelines

Decommissioning Options:

The following options considered (and identified in terms of applicability to the flowline and umbilical in Table 3.2) are:

Option 1 – Complete removal

Option 2 – Partial removal and make safe the pipeline (or umbilical) ends

Option 3 – Umbilical only. As option 2 above, but with rock emplacement to compensate those areas where the original trench has not completely backfilled

Option 4 – Umbilical only. As option 2 above, but with removal of a 3.5km length of umbilical measured from the A2D platform to compensate for those areas where the original trench had not completely backfilled

Table 3.2: Pipeline or Pipeline Groups Decommissioning Options			
Pipeline or Group (as per PWA)	**Condition of line/group (Surface laid/Trenched/ Buried/ Spanning)**	**Whole or part of pipeline/group**	**Decommissioning options considered**
PL1987	Trenched & backfilled	Whole pipeline	1, 2
PLU1988	Trenched & naturally backfilled	Whole umbilical	1, 2, 3, 4

Comparative Assessment Method:

A comparative assessment of the decommissioning options was done in accordance with the Centrica guidance for comparative assessments for decommissioning. Each decommissioning option was quantitatively and qualitatively assessed against safety, environmental, technical, societal, and cost criteria. Please refer [2] in section 7 for details.

Outcome of Comparative Assessment:

Table 3.3: Outcomes of Comparative Assessment		
Pipeline or Group	**Recommended Option**	**Justification**
PL1987	2. Partial removal, leaving the majority of	The majority of the pipeline will be left *in situ*. Minimal seabed disturbance, lower energy usage, reduced risk

Table 3.3: Outcomes of Comparative Assessment		
Pipeline or Group	**Recommended Option**	**Justification**
	the pipeline *in situ* and making safe the ends. Unbolt the spool piece connection at the flange just outside the Amethyst A2D jacket and remove the spool pieces and exposed section of flowline. The riser and 30" caisson will remain with the A2D platform. At Rose, remove the spool pieces and exposed section of flowline.	to personnel and lower cost all contribute to the proposed recommendation. Most of the seabed area comprises gravelly sand towards the Rose wellhead end and sandy gravel towards the A2D platform end. The pipeline is buried to a depth of >1.0m for most of its length, and will be safe to leave *in situ.* Minimal seabed disturbance, lower energy usage and reduced risk to personnel all contribute to the proposed recommendation. The predominant type of fishing in the area is by static line, with no evidence of scarring on the seabed from trawler activity. Please refer to Appendix A.1 for burial profiles. At the A2D platform the flange closest to the exterior face of the jacket will be unbolted, and approximately 74m of spool pieces recovered. One spool piece (connected to the base of the riser and within the jacket) shall remain. A further 107m of pipeline will be removed, cutting at the east end of the mattress extent where the pipeline enters the trench as shown in Figure 2.1, at a depth 0.75m to top of pipe. At the Rose wellhead the end of the pipeline will be cut 15m west of the mattress extent (as shown in Figure 2.1) at a depth of 0.75m to top of pipe and retrieved. The pipeline decommissioning will involve the removal of approximately 88m of spool pieces and 111m of pipeline. Monitoring to confirm the pipeline remains buried will be done to a schedule agreed with the DECC.

Table 3.3: Outcomes of Comparative Assessment		
Pipeline or Group	**Recommended Option**	**Justification**
PLU1988	2. Partial removal leaving the majority of the umbilical *in situ* and making the ends safe. At A2D platform end, cut the umbilical at the east end of the mattress extent and remove umbilical length to the TUTU on the platform. The J-tube will remain with the Amethyst A2D jacket. At the Rose wellhead end, cut the umbilical at the west end of the mattress extent and remove length to the SUTU.	The majority of the umbilical will be left *in situ.* Minimal seabed disturbance, lower energy usage, reduced risk to personnel and lower cost all contribute to the proposed recommendation. Most of the seabed area comprises gravelly sand towards the Rose wellhead end and sandy gravel towards the A2D platform end. The umbilical is trenched along its length, and has been left to naturally backfill. Each end of the umbilical will be cut and removed as shown in Figure 2.1. Some parts of the umbilical are buried to a depth shallower than 0.6m but remain stable; in these areas the umbilical will be left *in situ*. The predominant type of fishing in the area is by static line, with no evidence of scarring on the seabed from trawler activity. Please refer to Appendix A.2 for burial profiles. At the A2D platform end the umbilical will be disconnected from the TUTU and retrieved from the J-tube. This section along with the section currently covered with mattresses will be fully recovered to shore. This will remove approximately 230m of umbilical. At the Rose wellhead end the umbilical will be disconnected from the Xmas tree and cut at the end of the mattress extent, and retrieved. This will remove approximately 148m of umbilical. Where cuts are made on buried umbilical, the seabed will be excavated to the cut location and left to naturally backfill. Monitoring to confirm the umbilical remains buried will be done to a schedule agreed with DECC.

3.5 Pipeline Stabilisation Features

With the exception of four concrete mattresses that are buried along the length of the umbilical (refer to Figure 7.7) all grout bags and the concrete mattresses will be recovered to shore.

Table 3.4: Pipeline Stabilisation Features

Stabilisation features	Number	Option	Disposal Route (if applicable)
Concrete Mattresses (Pipeline and Umbilical Ends)	112	Full recovery	Recover to shore for reuse, recycling or disposal.
Grout Bags	Approx. 200	Full recovery	Recover to shore for reuse, recycling or disposal.
Rock Emplacement	Approx. 5,547Te (see Table 2.4)	Leave *in situ*	Leave *in situ.*

Decommissioning options for midline mattresses:

The three options considered for the four buried midline concrete mattresses over the umbilical PLU1988, comparatively assessed, are:

Option 1 – Complete removal with no remedial works

Option 2 – Complete removal and replace concrete mattresses with graded rock

Option 3 – Leave *in situ*

Table 3.5: Pipeline Stabilisation Features Decommissioning Options

Stabilisation feature	Condition of line/group (Surface laid/Trenched/ Buried/ Spanning)	Number	Decommissioning options considered
Concrete Mattresses (midline of umbilical)	Buried	4 (These may be found at two separate locations: Please refer to Figure 7.7)	1, 2, 3

Comparative Assessment Method:

A comparative assessment of the decommissioning options was carried out in accordance with the Centrica guidance for comparative assessments for decommissioning. Each decommissioning option was quantitatively and qualitatively assessed against safety, environmental, technical, societal, and cost criteria. Please refer [2] in section 7 for details.

Outcome of Comparative Assessment:

Table 3.6: Outcomes of Comparative Assessment

Stabilisation feature	Recommended Option	Justification
Concrete Mattresses (midline of umbilical)	Option 3. Leave *in situ*	The mattresses are not visible at their specified locations. This would suggest that the mattresses have become buried. Therefore, the four buried midline mattresses will be left *in situ*, primarily to minimise seabed disturbance environmental impact and risk to offshore and onshore personnel. The NFFO have been consulted and they have expressed no concerns with this approach.

Table 3.6: Outcomes of Comparative Assessment		
Stabilisation feature	**Recommended Option**	**Justification**
		Removal would require the concrete mattresses to be exposed. Most likely this will involve the use of water-jetting to clear the seabed material from the top of the mattresses. This would result in the umbilical underneath being exposed, so if the concrete mattresses were to be removed we expect that they would need to be replaced with graded rock. We believe that such measures would unnecessarily disturb the seabed. The predominant type of fishing in the area is by static line, with no evidence of scarring on the seabed from trawler activity. Therefore, leaving the mattresses where they are will result in the least disturbance to the seabed and is unlikely to present a snagging hazard to other users of the sea. Monitoring to confirm the mattresses remain in place will be performed to a schedule agreed with the DECC.

3.6 Wells

Table 3.7: Well Plug and Abandonment
The Rose field consists of a single production well (47/15b-6W). The well listed in Section 2.4 (Table 2.5) above will be plugged and finally abandoned in accordance with Oil & Gas UK Guidelines for the Suspension and Abandonment of Wells, Issue 4, July 2012. A Master Application Template (MAT) and the supporting Subsidiary Application Template (SAT) will be submitted in support of works carried out. A PON5 will also be submitted to the DECC for application to abandon the wells. Plug and abandonment is scheduled to occur in 2015.

3.7 Drill Cuttings

There are no existing drill cuttings associated with Rose. This conclusion is supported by the 2012 survey data. The bathymetry data obtained from the 2012 survey showed no evidence of an accumulation of cuttings at the well location (see Section 3 of the Environmental Decommissioning Survey [3] in section 7). The level of barium (an indicator of the presence of contamination from drilling) was below published guidance levels at all stations.

3.8 Waste Streams

Table 3.8: Waste Stream Management Methods	
Waste Stream	**Removal and Disposal method**
Bulk liquids	The pipeline will be pigged and left filled with seawater. The riser will be filled with potable water to preserve it for potential reuse. The corrosion inhibitor and methanol will be removed from the umbilical prior to the start of the decommissioning activities. Any residual fluids from within the sections of pipeline and umbilical will be released to marine environment under permit prior to removal to shore. Further cleaning and decontamination will take place onshore prior to recycling / re-use.
Marine growth	Removed offshore. Disposed of according to guidelines and company policies.
NORM/LSA Scale	NORM is not expected. However, tests for NORM will be done offshore and any NORM encountered will be dealt with and disposed of in accordance with guidelines and company policies.
Asbestos	n/a

Table 3.8: Waste Stream Management Methods	
Waste Stream	**Removal and Disposal method**
Other hazardous wastes	Will be recovered to shore and disposed of according to guidelines and company policies.
Onshore Dismantling sites	Appropriate licensed sites will be selected. Dismantling site must demonstrate proven disposal track record and waste stream management throughout the deconstruction process and demonstrate their ability to deliver innovative reuse and recycling options.

Table 3.9: Inventory Disposition				
Inventory	**Total Inventory Tonnage**	**Planned tonnage to shore**	**Planned tonnage decommissioned *in situ***	**Planned tonnage left in situ for potential re-use**
Installations	62	62	0	0
Pipelines	1620	495	1123	2

A distinction is made between the planned tonnage decommissioned *in situ* and that left for potential re-use. The planned tonnage decommissioned *in situ* comprises the majority of the flowline inclusive of protective coating. The riser will be left *in situ* for potential reuse, to be decommissioned as part of the A2D platform at some point in the future.

All recovered material will be transported onshore for reuse, recycling or disposal. It is not possible to predict the market for reusable materials with any confidence; so the figures in Table 3.10 are disposal aspirations.

Table 3.10: Reuse, Recycle & Disposal Aspirations for Recovered Material			
Inventory	**Re-use**	**Recycle**	**Disposal**
Installations (62 Tonnes)	Approx. 45%	Approx. 55%	<5%
Pipelines (495 Tonnes)	<5%	Approx. 95%	<5%

Please refer to Section 5.6 of the Environmental Impact Assessment [1] in section 7 for further details.

4. ENVIRONMENTAL IMPACT ASSESSMENT

4.1 Environmental Sensitivities

Table 4.1: Environmental Sensitivities	
Environmental Receptor	**Main Features**
Conservation Interests	No Annex I habitats have been identified in any surveys undertaken within or adjacent to the area of activity. Although there is potential for a number of Annex II species to be present within the vicinity, the nature of the activities being undertaken is anticipated to have low impact significance upon these species. The infrastructure is within or close to a number of recommended or candidate sites as well as designated protected sites. In general, activities are not anticipated to have any impacts upon these sites. The pipeline and umbilical pass through the Holderness Offshore and Silver Pit recommended Marine Conservation Zones. It is possible that the features for which these sites have been recommended, most notably their benthic habitats and associated species could be impacted, in particular through the disturbance of sediments and removal of areas of substrate. However, the footprint of the area likely to be impacted represents less than 0.0001% of the

Table 4.1: Environmental Sensitivities	
Environmental Receptor	**Main Features**
	rMCZ area. In the event of a large hydrocarbon release, it was found that a proportion of the hydrocarbon would be captured within the sediment of the adjacent protected sites. However, the possibility of such an event and the low concentrations that would be recorded within the sediment (comparable to background concentrations) mean the significance of the impact is considered low.
Seabed	The seabed in the area comprises two main types. The sediment at the central area and western end of the pipeline is 'sandy gravel', while the pipeline close to and south east of the Rose wellhead was characterised as 'gravelly sand'. Boulders were found across the entire survey area. In general the marine habitats and their associated species depend on the available substrate and sediment composition. Two biotopes (categorisation based on marine substrate and the marine flora and fauna present) were identified within the Rose field. The finer sandy sediments were found to be impoverished, with only mobile crustacean such as crabs present. However the coarser sediments, which occurred much more widely, were found to contain a variable composition on benthic species such as bryzoans, hydroids, anemones, soft corals, as well as crustacea and starfish. The removal of infrastructure from the seabed and any associated water-jetting of sediments will impact the seabed. Sensitive marine habitats are likely to be damaged as a result of seabed disturbance and the temporary placement of materials on the seabed. In addition, there is potential for resuspended sediment to settle on sensitive habitat and species smothering them. However, since the majority of the umbilical and pipeline are being left *in situ*, the extent of the disturbance is likely to be minimal in comparison to the area of available habitat. The habitat observed is not unique to the area and represents a small proportion to that available within the wider southern North Sea. The pipeline will be pigged and flushed to remove hydrocarbons. The methanol and chemical injection cores in the umbilical will also be flushed. Therefore, discharges to marine environment will be minimal. As the pipeline and umbilical degrade over time, there may be small additional releases of residual flushing water and hydraulic fluid to the sediments and to the water column. In the event of a large hydrocarbon release, it was found that a proportion of the hydrocarbon would be captured within the sediment. However, given the likelihood of such an event and the low concentrations that would be recorded within the sediment (comparable to background concentrations) the significance of the impact is considered low.
Atmosphere	In general, offshore meteorological conditions will lead to rapid dispersion and dilution of atmospheric emissions. Impacts arising as a result of emissions (largely comprising combustion gases) are therefore likely to be short-term and highly localised and are assessed as of low significance. The emission of combustion gases will contribute to global effects (e.g. global warming). However, given the relatively small volume of gases to be emitted and the control and mitigation measures that will be implemented the significance of the impact is low.
Birds	The greatest risk to birds from the Rose activities would be the accidental occurrence of a large hydrocarbon release. Oil spill modelling for a worst case diesel release; found that hydrocarbons only persisted in the water column for 9 hours. Additionally decommissioning activities are scheduled to take place outside the period where seabirds are most vulnerable. Although birds could be affected by the diesel release, given the timing of activities and the relatively short duration it would be

Table 4.1: Environmental Sensitivities	
Environmental Receptor	**Main Features**
	expected to remain on the sea surface (therefore being available to oil birds' feathers) the potential impact is assessed as of low significance.
Fish	Fish populations in the area could be affected by seabed disturbance, the generation of underwater noise and chemical / hydrocarbon releases associated with activities. It is not anticipated that large amounts of turbidity will be generated which could impact fish themselves, however even a small amount of turbidity or disturbance of the seabed itself could have impacts to spawning and nursery grounds. A number of species are known to use the seabed in the area around the Rose asset area as spawning – including herring, and nursery grounds. Different species spawn at different times; therefore it is likely that whenever the activities are undertaken they could coincide with a spawning period. However, information regarding spawning grounds and nursery grounds covers large areas, the seabed within the Rose field is representative of much of the southern North Sea and therefore the significance of any impact has been assessed as low. The same is the case for nursery grounds. The levels of noise generated are not anticipated to have any physiological impact to fish. It is likely that the activities will result in a startled response, moving fish away from the area. The pipeline and umbilical will be flushed and cleaned prior to the operations, therefore only relatively small volumes of chemicals will be released to the environment at very low concentrations, and these will be permitted under the Offshore Chemical Regulations. As such the impact of the releases on the fish population has been assessed as of low significance.
Marine Mammals	Given the existing background noise levels and the relatively short duration of the activities, the underwater noise levels generated by vessels are unlikely to lead to physiological damage to marine mammals. The harbour porpoise is an Annex II (Habitats Directive) species, and the only marine mammal in the vicinity in recordable densities. The locally resident or transiting populations of marine mammals may be disturbed by noise in the immediate vicinity, but any such disturbance is expected to be short-term and the impact has been assessed as of low significance.
Fishing Industry	Impacts on fishing industry have been assessed as of low significance as the decommissioning activities will be relatively short-term and generally within the current 500m exclusion zone around the A2D platform or at the well location. The predominant type of fishing in the area is by static line, with no evidence of scarring on the seabed from trawler activity. It will be necessary to establish a temporary exclusion zone around the wellhead whilst activities are being carried out. A trawlability assessment will identify if there are snag hazards after activities have been completed.
Other Users of the Sea	There will be a relatively short period when vessels will be operating around the Rose wellhead, pipeline and the A2D platform, and there will be a higher than normal level of shipping activity. However, the associated effects will be short-term. There are no planned wind farm developments or aggregate extraction licenses in the immediate vicinity of the Rose field. The pipeline and umbilical will remain buried in the seabed; therefore the long term impact of leaving these *in situ* on other users of the sea has been assessed as low.

Table 4.1: Environmental Sensitivities	
Environmental Receptor	**Main Features**
Onshore Communities	The impact of the disposal of waste on onshore communities would be slightly beneficial as it will contribute to the continuation of jobs. However this is expected to be small as the disposal sites already exist and the volume of waste is relatively small.

4.2 Potential Environmental Impacts and their Management

Environmental Impact Assessment Summary:

There will be some planned and unplanned environmental impacts arising from decommissioning of the Rose infrastructure. Long-term environmental impacts from the decommissioning operations are expected to be low. Incremental cumulative impacts and trans-boundary effects associated with the planned decommissioning operations are expected to be low. There will be a requirement for a new environmental management protection plan to be produced and submitted to the DECC should the Decommissioning Programmes change.

Overview:

Table 4.2: Environmental Impact Management		
Activity	**Main Impacts**	**Management**
Topsides Removal	n/a	
Jacket/Floating Facility Removal	n/a	
Subsea Installation Removal	For decommissioning and removal of the WHPS and the Wellhead the impacts are disturbance of the seabed by lifting, temporary placement on seabed if required and possible dropped objects, noise from vessels and cutting and operational discharges from vessels. Impacts are expected to be short-term and localised and of low significance.	Activities will be planned to be executed as efficiently as possible, minimising cutting and disturbance of the seabed in order to reduce the potential for impact on the area around the wellhead. Vessels will be managed to minimise the durations required and associated discharge. In addition, on board operational practices will address fuel efficiency, noise management and minimise waste.
Decommissioning Pipelines	Decommissioning of the pipeline and umbilical *in situ* will require activities such as local water-jetting of sediments, cutting and temporary placement of equipment or components. Decommissioning of the umbilical will require it to be cut and removed from the 'j'-tube at the A2D platform and recovered to shore. At Rose a section of the umbilical will be recovered to shore. Any exposed ends at Rose will be cut back at the buried location. Removed components will be lifted from the seabed by DSV. Principal impacts will include disturbance of the seabed and noise from removal and cutting activities plus operational support vessels. These effects are expected to be short-	Activities will be planned to be executed as efficiently as possible, minimising disturbance of the seabed in order to reduce the potential for impact on the area around the pipeline and umbilical. Consideration will be given where equipment and/or components should be temporarily placed on the seabed prior to removal, seeking to minimise the requirement wherever possible. Vessels will be managed to minimise the durations required and associated discharges. In addition, on board operational practices will address fuel efficiency, noise management and minimise waste.

Table 4.2: Environmental Impact Management		
Activity	**Main Impacts**	**Management**
	term and localised. The seabed and associated ecosystem is expected to recover rapidly once activities cease.	
Decommissioning Stabilisation Features	The Decommissioning Programme includes the removal of concrete mattresses and grout bags which may be temporarily placed on the seabed. Mattresses and grout bags will be lifted from the seabed by DSV. Impacts will include disturbance of the seabed and noise from vessels. These effects are expected to be short-term and localised. The seabed and associated ecosystem is expected to recover rapidly once activities cease.	Activities will be planned to be executed as efficiently as possible, minimising cutting and disturbance of the seabed in order to reduce the potential for impact. Consideration will be given to how the work is to be conducted and where equipment and/or components should be temporarily placed on seabed prior to removal, seeking to minimise the requirement wherever possible. Vessels will be managed to minimise the durations required and associated discharges. In addition on board operational practices will address fuel efficiency, noise management and minimise waste.
Decommissioning Drill Cuttings	n/a	

5. INTERESTED PARTY CONSULTATIONS

Consultations Summary:

During the public consultation period (24 March to 21 April 2015), copies of the Decommissioning Programmes and supporting documents were forwarded to the following Statutory Consultees:

- The National Federation of Fishermen's Organisations (NFFO);
- The Scottish Fishermen's Federation (SFF);
- The Northern Ireland Fish Producer's Organisation (NIFPO); and,
- Global Marine Systems Limited (GMS).

Meetings and telephone calls have been held with NFFO to advise of progress and to provide more detail of the proposals.

We also sent copies of the Decommissioning Programmes and supporting documents to Perenco UK Ltd.

Copies of the Decommissioning Programmes and supporting documents were also made available as a download from the Rose Decommissioning website: http://www.centricaenergy.com/rose

A bound copy of the Decommissioning Programmes was also made available in the Hull Central Library.

A public notice was published in the Hull Daily Mail and the London Gazette on 24 March 2015. Please refer to Appendix B.1 for a copy of the public notices. The public notice gave instructions for representations to be made in writing by Tuesday 21 April 2015. Centrica received no comments or any written or verbal representation from the public in direct response to the public notice or during the public consultation period.

Copies were also submitted for consideration to DECC

Table 5.1: Summary of Stakeholder Comments		
Stakeholder	**Comment**	**Response**
INFORMAL CONSULTATIONS		
Perenco UK Ltd	Perenco UK Ltd have no concerns in relation to the Draft Rose Decommissioning Programmes	Refer Appendix B.6
STATUTORY CONSULTATIONS		
NFFO	Having been in regular contact with regards to the decommissioning the Federation have no adverse comment to make.	Refer Appendix B.2 The NFFO have been provided with a copy of the rig schedule and will be informed with regards to timing of decommissioning operations
SFF	Given the location of the Rose installation and pipelines (southern North Sea), SFF would be in agreement with any comments and recommendations made on this decommissioning project by the National Federation of Fishermen's Organisation (NFFO).	Refer Appendix B.3
NIFPO	This field is outside the main area of operation for our members and as such we have no comment to make on the proposals.	Refer Appendix B.4
Global Marine Systems	We don't have any specific comments on the programme of works itself as no cables should be directly affected in the immediate vicinity, and if any interaction were unexpectedly to be necessary in the course of engineering the project, then it would be necessary to liaise with specific cable owners. Contact details and general cable information for any systems affected can be found using KIS-ORCA cable awareness charts/interactive map http://www.kis-orca.eu/map#.VPmDJHZFDIU. Global Marine Systems would recommend that when notice to mariners were arranged for the offshore works, then the kingfisher fortnightly bulletin be updated to include details of the works to inform sea users as well as notifying the relevant authorities and UKHO.	Refer Appendix B.5 Centrica will keep Kingfisher informed of any planned operations
Public	No concerns or objections were raised.	

6. PROGRAMME MANAGEMENT

6.1 Project Management and Verification

A Centrica project management team will be appointed to manage the operations of competent contractors selected for all decommissioning activities. The team will ensure the decommissioning is executed safely, in accordance with legislation and Centrica Health and Safety principles. Changes to the Decommissioning Programmes will be discussed with the DECC and any necessary approval sought.

6.2 Post-Decommissioning Debris Clearance and Verification

A post-decommissioning environmental seabed survey at the Rose wellhead location and along

the pipeline and umbilical route will be compared with the pre-decommissioning environmental survey. Results of this survey will be available once the work is complete, with a copy forwarded to the DECC.

All pipeline routes and the Rose installation site will be the subject of debris and overtrawlability assessments when decommissioning activities have concluded. The assessment will include a survey of a 200 metre-wide corridor along the pipeline and umbilical routes and the Wellhead 500 metre zone. Any seabed oil and gas debris will be recovered for onshore disposal or recycling in line with existing disposal methods. Independent verification of seabed state will be obtained and this will be supported by a Certificate of Clearance. This will be included in the Close Out Report and sent to the Seabed Data Centre (Offshore Installations) at the Hydrographic Office.

6.3 Schedule

A proposed schedule is provided in Figure 6.1. The activities are subject to the acceptance of the Decommissioning Programmes presented in this document and any unavoidable constraints (e.g. vessel availability) that may be encountered while executing the decommissioning activities. Therefore, activity schedule windows have been included to account for this uncertainty.

The commencement of offshore decommissioning activities is constrained by the need to make preparations subsea in the beginning of June 2015 before the arrival of the contracted drilling rig on the 24th June 2015.

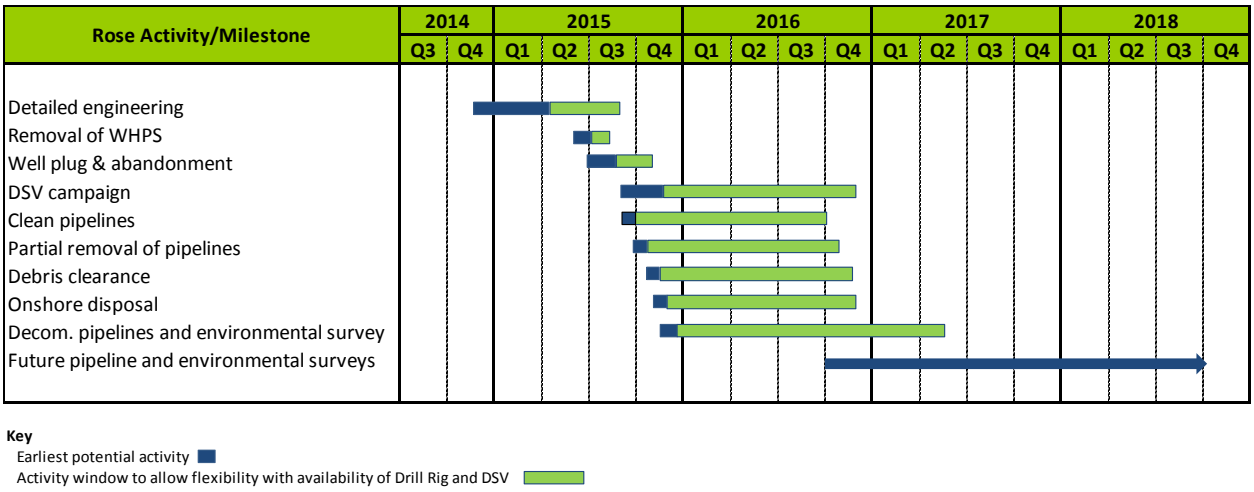


Figure 6.1: Gantt Chart of Project Plan

6.4 Costs

Table 6.1: Provisional Decommissioning Programmes Costs	
Item	**Estimated Cost (£m)**
Platform/Jacket – Preparation / Removal and Disposal	n/a
Pipeline, Umbilical and Subsea Installation Decommissioning	13.0
Well Abandonment	10.0
Future Pipeline and Environmental Survey Requirements*	1.0
TOTAL	24.0

* Based on four inspections – 2 x Environmental and 2 x Pipeline Surveys

6.5 Close Out

A close out report will be submitted to the DECC within four months of the completion of the offshore work, including debris clearance and post-decommissioning surveys, as required in the DECC guidelines. The report will explain any variance from the Decommissioning Programmes.

6.6 Post-Decommissioning Monitoring and Evaluation

After decommissioning has been completed, pipeline status surveys and environmental surveys will be completed with the findings being sent to the DECC. The frequency of future surveys will be agreed with the DECC.

The pipeline riser and spool piece will remain with the A2D platform until end of field life when they will be removed.

7. SUPPORTING DOCUMENTS

Table 7.1: Supporting Documents	
Document Number	**Title**
[1] CEU-HSEQ-SNS0057-REP-0001 5134994-REP-EN-001 [Atkins Doc No.]	Rose Development Decommissioning Environmental Impact Assessment (March 2015)
[2] CEU-PRJ-SNS0057-REP-0009 5134994-REP-SU-002 [Atkins Doc No.]	Rose Decommissioning Comparative Assessment (March 2015)
[3] 12/J/1/03/2115/1394	Rose Environmental Decommissioning Survey Environmental Baseline Study and Habitat Assessment (10 April 2013)

APPENDIX A BURIAL PROFILES

Appendix A.1 Burial Profile – Pipeline

Rose pipeline survey data from 2012 is presented in Figure 7.1 and Figure 7.3 with cut locations marked. KP0 is located at the pipeline flange at Rose, with KP increasing heading west. The survey data does not extend into the A2D platform 500m exclusion zone but the cut position shows that the pipeline will be cut at a depth of 0.75m to top of pipe. The pipeline shows excellent levels of burial along the majority of the length.

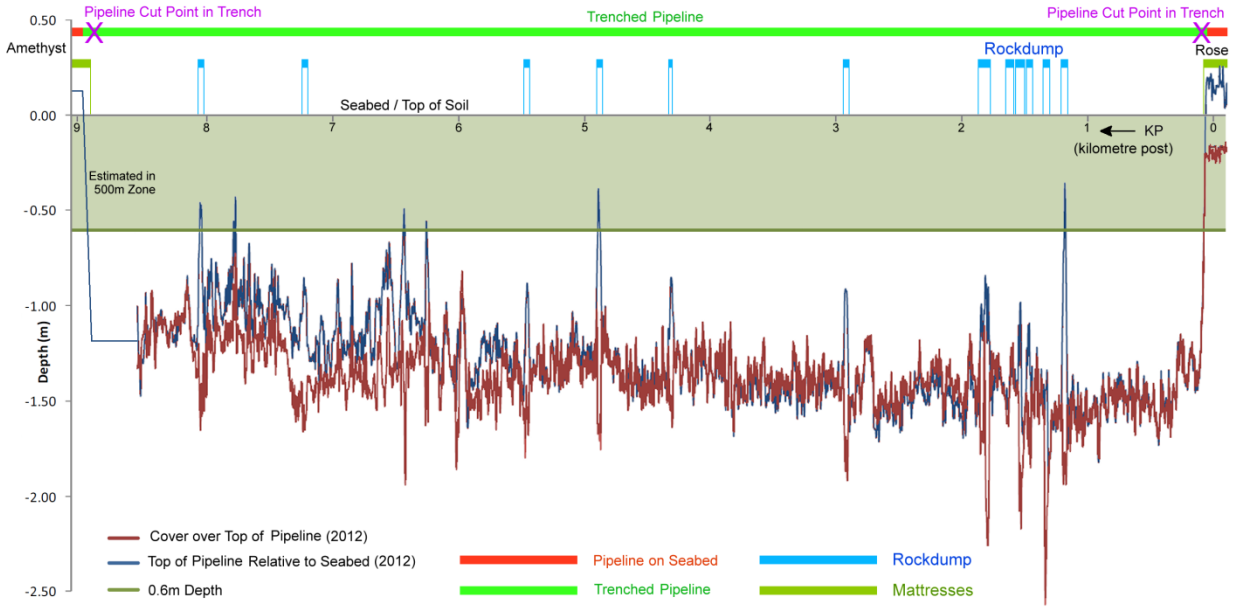


Figure 7.1: Pipeline burial profile - condensed[1]

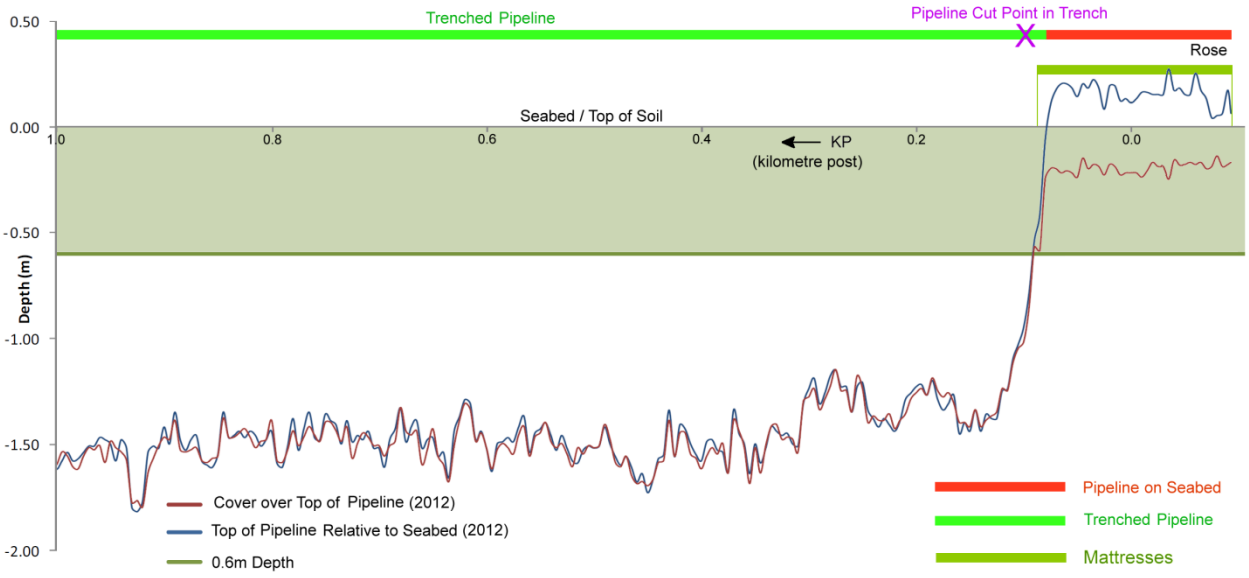


Figure 7.2: Pipeline burial profile at Rose well end[1]

[1] The more negative the depth of cover the greater the depth of cover over top of pipeline or umbilical.

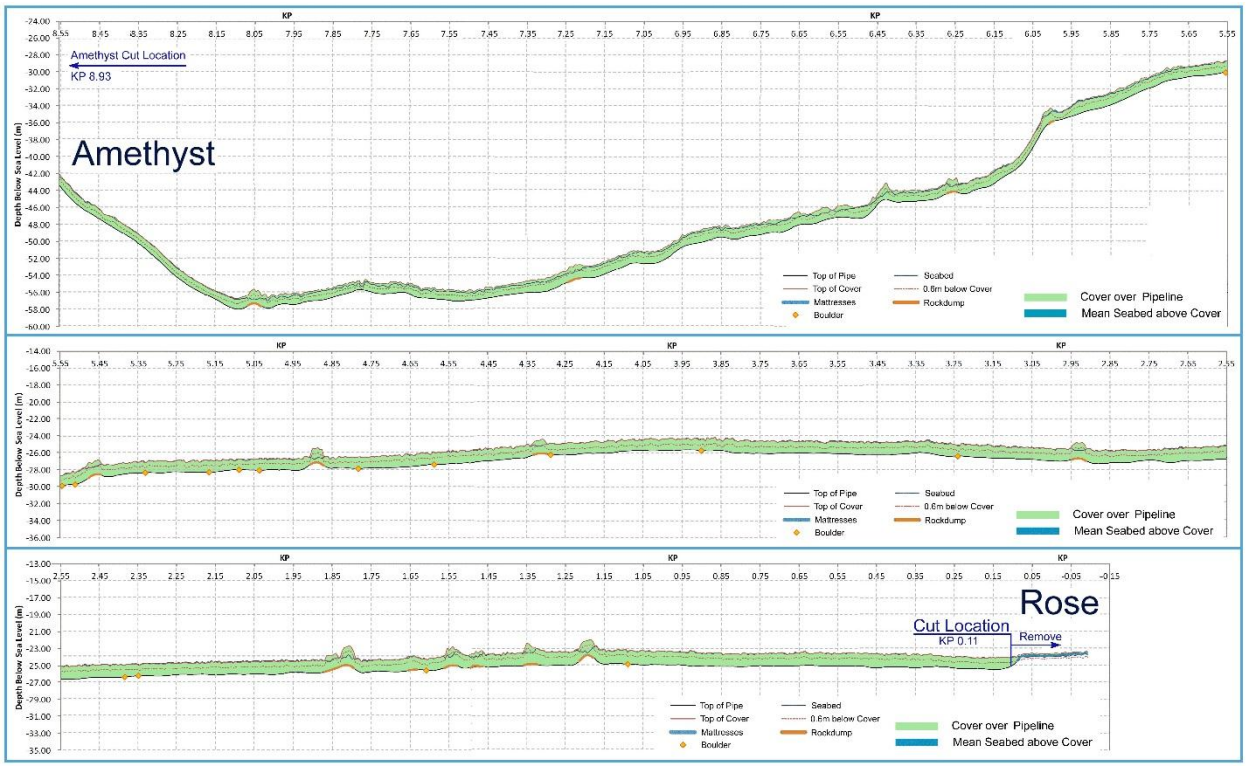


Figure 7.3: Pipeline burial profile

Appendix A.2 Burial Profile – Umbilical

Rose umbilical survey data from 2012 is presented in Figure 7.4 and Figure 7.7, with cut locations marked. KP0 is located at the top of the J-tube on the A2D platform, with KP increasing heading east. The survey data does not extend into the A2D platform 500m exclusion zone. There is varying depth of cover along the length of the umbilical, with some sections within the first 3.5km of shallow cover. However, there are no exposures along the length, even where the top of the umbilical is higher than the adjacent seabed (e.g. at around KP1.45, more detail shown in Figure 7.5), and an interrogation of historical survey data has shown that the seabed has been stable over a number of years. The four buried midline mattresses are also shown Figure 7.4 and Figure 7.7.

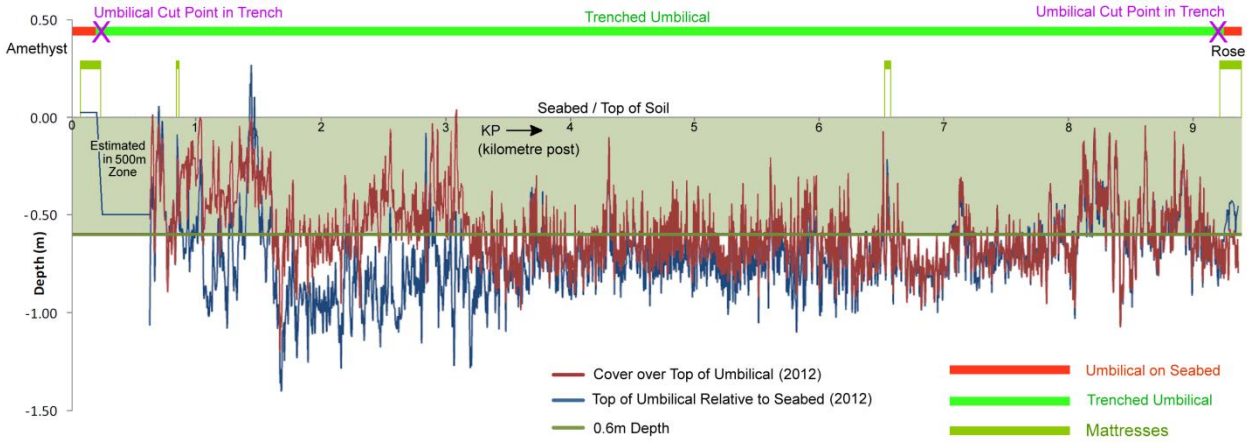


Figure 7.4: Umbilical burial profile – condensed[1]

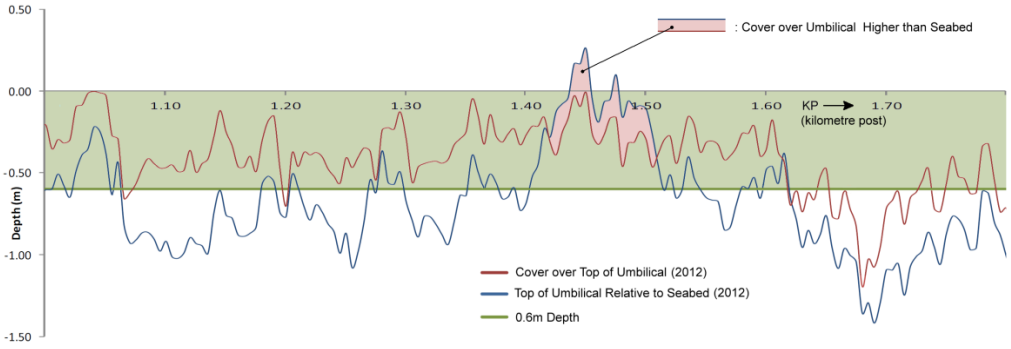


Figure 7.5: Umbilical burial profile @ KP1.45[1]

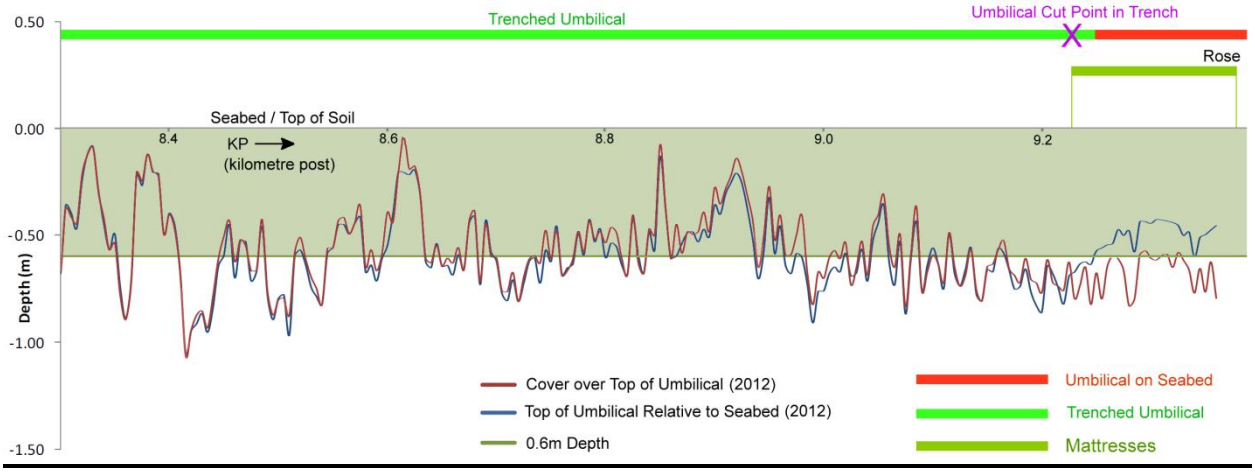


Figure 7.6: Umbilical burial profile at Rose well end[1]

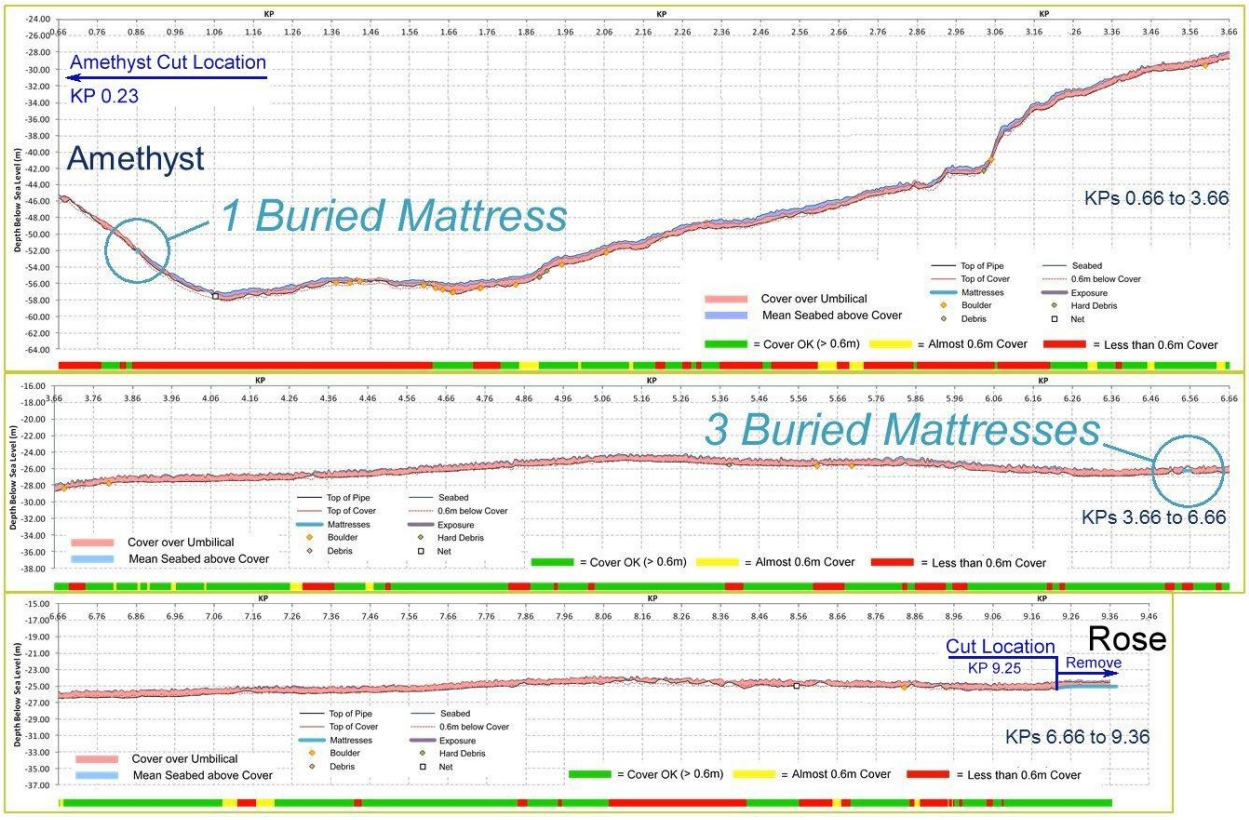
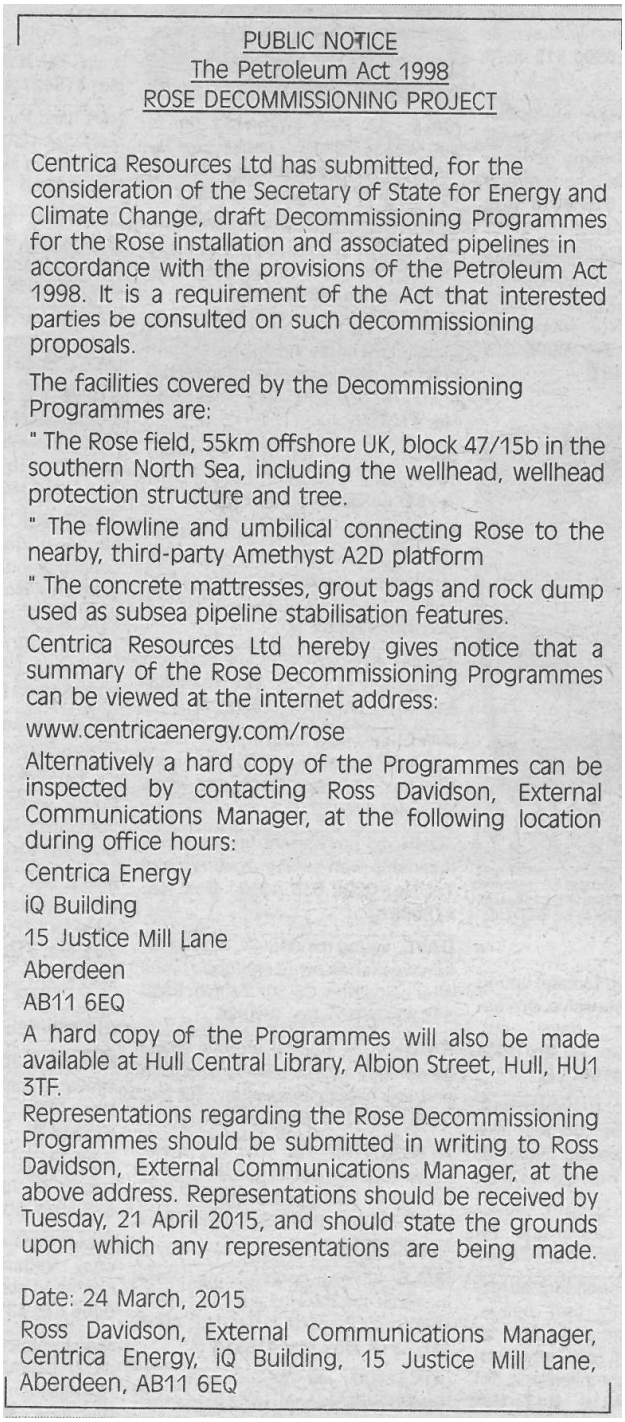


Figure 7.7: Umbilical burial profile

APPENDIX B PUBLIC NOTICE & CONSULTEE CORRESPONDENCE

Appendix B.1 Public Notices



PUBLIC NOTICE
The Petroleum Act 1998
ROSE DECOMMISSIONING PROJECT

Centrica Resources Ltd has submitted, for the consideration of the Secretary of State for Energy and Climate Change, draft Decommissioning Programmes for the Rose installation and associated 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 facilities covered by the Decommissioning Programmes are:

" The Rose field, 55km offshore UK, block 47/15b in the southern North Sea, including the wellhead, wellhead protection structure and tree.

" The flowline and umbilical connecting Rose to the nearby, third-party Amethyst A2D platform

" The concrete mattresses, grout bags and rock dump used as subsea pipeline stabilisation features.

Centrica Resources Ltd hereby gives notice that a summary of the Rose Decommissioning Programmes can be viewed at the internet address:

www.centricaenergy.com/rose

Alternatively a hard copy of the Programmes can be inspected by contacting Ross Davidson, External Communications Manager, at the following location during office hours:

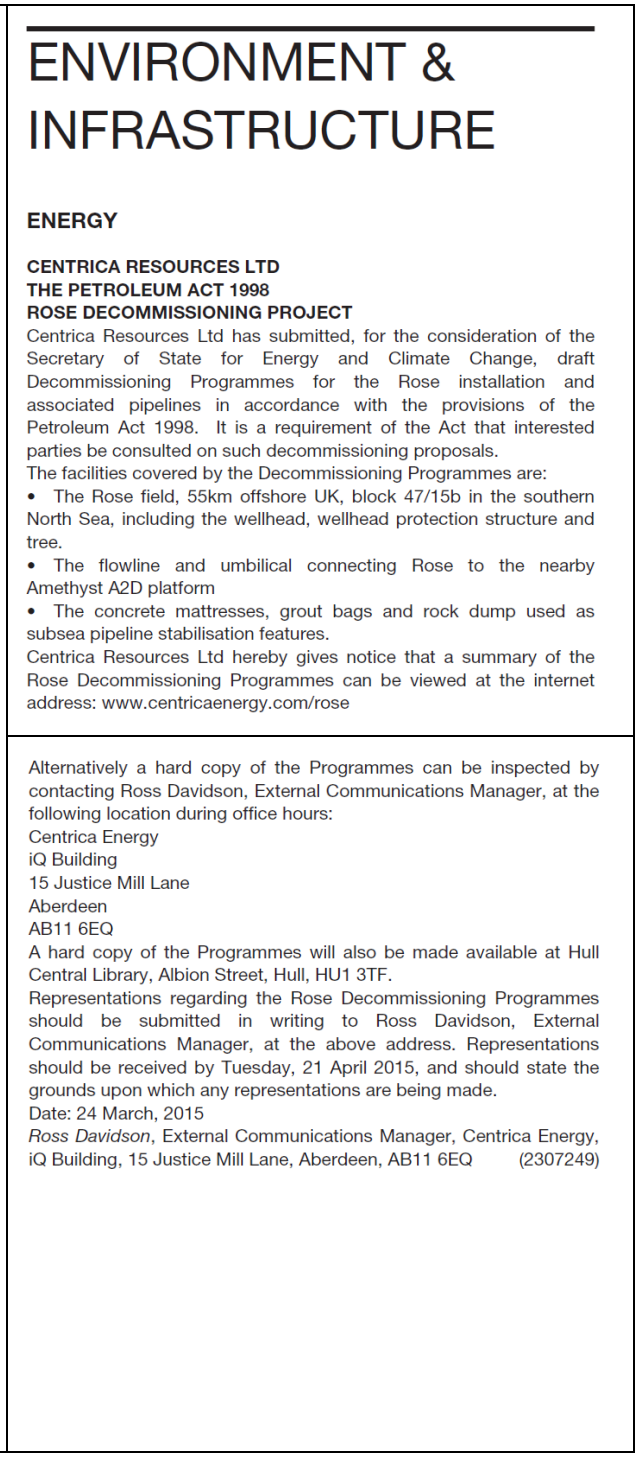
Centrica Energy
iQ Building
15 Justice Mill Lane
Aberdeen
AB11 6EQ

A hard copy of the Programmes will also be made available at Hull Central Library, Albion Street, Hull, HU1 3TF.

Representations regarding the Rose Decommissioning Programmes should be submitted in writing to Ross Davidson, External Communications Manager, at the above address. Representations should be received by Tuesday, 21 April 2015, and should state the grounds upon which any representations are being made.

Date: 24 March, 2015

Ross Davidson, External Communications Manager, Centrica Energy, iQ Building, 15 Justice Mill Lane, Aberdeen, AB11 6EQ



ENVIRONMENT & INFRASTRUCTURE

ENERGY

CENTRICA RESOURCES LTD
THE PETROLEUM ACT 1998
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Date: 24 March, 2015

Ross Davidson, External Communications Manager, Centrica Energy, iQ Building, 15 Justice Mill Lane, Aberdeen, AB11 6EQ (2307249)

Public Notices: Hull Daily Mail & The London Gazette (both 24 Mar 2015)

Appendix B.2 NFFO – Mr Alan Piggot via Email & Meeting

Feedback received was via a meeting held 16 April 2015. The NFFO are comfortable with the approach and have no objections to the proposals for decommissioning the Rose field.

From: Davidson, Ross [mailto:Ross.Davidson@centrica.com]
Sent: 24 March 2015 16:36
To: apiggott@nffo.org.uk

Subject: REQUEST: Submission of Draft Rose Decommissioning Programmes and Comparative Assessment

Dear Alan,

Centrica Resources Ltd has submitted, for the consideration of the Secretary of State for Energy and Climate Change, draft Decommissioning Programmes for the Rse installation and associated 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 facilities covered by the Decommissioning Programmes are:

- The Rose field, 55km offshore UK, block 47/15b in the southern North Sea, including the wellhead, wellhead protection structure and tree.
- The flowline and umbilical connecting Rose to the nearby Amethyst A2D platform
- The concrete mattresses, grout bags and rock dump used as subsea pipeline stabilisation features.

Centrica Resources Ltd hereby gives notice that from Tuesday, 24 March, 2015, the Stamford Decommissioning Programmes can be viewed at the internet address: www.centricaenergy.com/rose

Alternatively, electronic copies of the Decommissioning Programmes and Comparative Assessment are attached to this email.

Separately you will receive a document transmittal from our document control department, please can you return this to acknowledge receipt.

Please can you confirm that you've received all the information you require, and if you have any questions or concerns, please make any representations to the undersigned by Tuesday, 21 April 2015.

Best regards,
Ross Davidson
External Communications Manager
Centrica Energy Exploration & Production
+44 (0) 7557 617098

www.centricaenergy.com/upstream

Appendix B.3 SFF - Mr. John Watt via Email

From: John Watt [mailto:J.Watt@sff.co.uk]
Sent: 25 March 2015 12:22
To: Davidson, Ross
Subject: RE: REQUEST: Submission of Draft Rose Decommissioning Programmes and Comparative Assessment
Dear Ross,
Thanks for the attached information for the Decommissioning programme at the Rose field.
Given the Rose field is located in the Southern North Sea, we would expect our colleagues from National Federation of Fishermen's Organisation (NFFO) to reply back to Centrica with any comments or concerns they may have. The Rose field Decommissioning programme will have a greater impact on the fishermen they represent.

Kind regards,
John
John Watt
Industry Advisor
Scottish Fishermen's Federation
24 Rubislaw Terrace
Aberdeen
AB10 1XE

From: Davidson, Ross [mailto:Ross.Davidson@centrica.com]
Sent: 24 March 2015 16:38
To: j.watt@sff.co.uk
Subject: REQUEST: Submission of Draft Rose Decommissioning Programmes, Comparative Assessment

Dear John,

Centrica Resources Ltd has submitted, for the consideration of the Secretary of State for Energy and Climate Change, draft Decommissioning Programmes for the Rse installation and associated 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 facilities covered by the Decommissioning Programmes are:

- The Rose field, 55km offshore UK, block 47/15b in the southern North Sea, including the wellhead, wellhead protection structure and tree.
- The flowline and umbilical connecting Rose to the nearby Amethyst A2D platform
- The concrete mattresses, grout bags and rock dump used as subsea pipeline stabilisation features.

Centrica Resources Ltd hereby gives notice that from Tuesday, 24 March, 2015, the Stamford Decommissioning Programmes can be viewed at the internet address: www.centricaenergy.com/rose

Alternatively, electronic copies of the Decommissioning Programmes and Comparative Assessment are attached to this email.

Separately you will receive a document transmittal from our document control department, please can you return this to acknowledge receipt.

Please can you confirm that you've received all the information you require, and if you have any questions or concerns, please make any representations to the undersigned by Tuesday, 21 April 2015.

Best regards,

Ross Davidson
External Communications Manager
Centrica Energy Exploration & Production
+44 (0) 7557 617098
www.centricaenergy.com/upstream

Appendix B.4 NIFPO - Mr. Ian Kelly via Email

From: Ian Kelly [mailto:nifpo@btconnect.com]
Sent: 22 April 2015 10:22
To: Davidson, Ross
Subject: RE: REQUEST: Submission of Draft Rose Decommissioning Programmes and Comparative Assessment

Ross

We have no comment to make on the proposed decommission programme as it is out with our main area of interest and membership.

Ian

From: Davidson, Ross [mailto:Ross.Davidson@centrica.com]
Sent: 24 March 2015 16:37
To: nifpo@btconnect.com
Subject: REQUEST: Submission of Draft Rose Decommissioning Programmes and Comparative Assessment

Dear Ian,

Centrica Resources Ltd has submitted, for the consideration of the Secretary of State for Energy and Climate Change, draft Decommissioning Programmes for the Rse installation and associated 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 facilities covered by the Decommissioning Programmes are:

- The Rose field, 55km offshore UK, block 47/15b in the southern North Sea, including the wellhead, wellhead protection structure and tree.
- The flowline and umbilical connecting Rose to the nearby Amethyst A2D platform
- The concrete mattresses, grout bags and rock dump used as subsea pipeline stabilisation features.

Centrica Resources Ltd hereby gives notice that from Tuesday, 24 March, 2015, the Stamford Decommissioning Programmes can be viewed at the internet address: www.centricaenergy.com/rose

Alternatively, electronic copies of the Decommissioning Programmes and Comparative Assessment are attached to this email.

Separately you will receive a document transmittal from our document control department, please can you return this to acknowledge receipt.

Please can you confirm that you've received all the information you require, and if you have any questions or concerns, please make any representations to the undersigned by Tuesday, 21 April 2015.

Best regards,

Ross Davidson
External Communications Manager
Centrica Energy Exploration & Production
+44 (0) 7557 617098
www.centricaenergy.com/upstream

Appendix B.5 Global Marine Systems Ltd – Mr John Wrottesley via Email

From: Wrottesley, John (GMSL) [mailto:John.Wrottesley@globalmarinesystems.com]
Sent: 29 April 2015 21:32
To: Axon, Simon
Subject: RE: REQUEST: Submission of Draft Rose Decommissioning Programmes and Comparative Assessment

Hi Simon,

Apologies for the delay in responding – it's a very busy time at the moment, but appreciate the reminder.

My comments are very similar as follows:

I have not received any further comments from colleagues, and don't have any specific comments on the programme of works itself as no cables should be directly affected in the immediate vicinity, and if any interaction were unexpectedly to be necessary in the course of engineering the project, then it would be necessary to liaise with specific cable owners. Contact details and general cable information for any systems affected can be found using KIS-ORCA cable awareness charts/interactive map http://www.kis-orca.eu/map#.VPmDJHZFDIU.

I would recommend that when notice to mariners were arranged for the offshore works, then the kingfisher fortnightly bulletin be updated to include details of the works to inform sea users as well as notifying the relevant authorities and UKHO.

Best regards, John

From: Davidson, Ross
Sent: 24 March 2015 16:39
To: john.wrottesley@globalmarinesystems.com
Subject: REQUEST: Submission of Draft Rose Decommissioning Programmes and Comparative Assessment

Dear John,

Centrica Resources Ltd has submitted, for the consideration of the Secretary of State for Energy and Climate Change, draft Decommissioning Programmes for the Rse installation and associated 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 facilities covered by the Decommissioning Programmes are:

- The Rose field, 55km offshore UK, block 47/15b in the southern North Sea, including the wellhead, wellhead protection structure and tree.
- The flowline and umbilical connecting Rose to the nearby Amethyst A2D platform
- The concrete mattresses, grout bags and rock dump used as subsea pipeline stabilisation features.

Centrica Resources Ltd hereby gives notice that from Tuesday, 24 March, 2015, the Stamford Decommissioning Programmes can be viewed at the internet address: www.centricaenergy.com/rose

Alternatively, electronic copies of the Decommissioning Programmes and Comparative Assessment are attached to this email.

Separately you will receive a document transmittal from our document control department, please can you return this to acknowledge receipt.

Please can you confirm that you've received all the information you require, and if you have any questions or concerns, please make any representations to the undersigned by Tuesday, 21 April 2015.

Best regards,

Ross Davidson
External Communications Manager
Centrica Energy Exploration & Production
+44 (0) 7557 617098
www.centricaenergy.com/upstream

Appendix B.6 Perenco UK Ltd – Mr Ian Moulton & Meeting

Feedback received was via a meeting held 16 April 2015. Perenco have no objections to the proposals for decommissioning the Rose field.

From: Axon, Simon
Sent: 25 March 2015 15:09
To: imoulton@uk.perenco.com
Subject: REQUEST: Submission of Draft Rose Decommissioning Programmes and Comparative Assessment

Dear Ian,

Centrica Resources Ltd has submitted, for the consideration of the Secretary of State for Energy and Climate Change, draft Decommissioning Programmes for the Rse installation and associated 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 facilities covered by the Decommissioning Programmes are:

- The Rose field, 55km offshore UK, block 47/15b in the southern North Sea, including the wellhead, wellhead protection structure and tree.
- The flowline and umbilical connecting Rose to the nearby Amethyst A2D platform
- The concrete mattresses, grout bags and rock dump used as subsea pipeline stabilisation features.

Centrica Resources Ltd hereby gives notice that as of Tuesday, 24 March, 2015, the Stamford Decommissioning Programmes can be viewed at the internet address: www.centricaenergy.com/rose

Alternatively, electronic copies of the Decommissioning Programmes and Comparative Assessment are attached to this email.

Separately you will receive a document transmittal from our document control department, please can you return this to acknowledge receipt.

Please can you confirm that you've received all the information you require, and if you have any questions or concerns, please make any representations to the undersigned as soon as you can, but by Tuesday, 21 April 2015.

Best regards,

Simon Axon
Decommissioning Consultant
For and on behalf of Centrica Energy Exploration & Production