Fulmar & Auk North

Preparation Work Scopes Decommissioning Programme

Final version

October 2020

DOCUMENT CONTROL

Approvals

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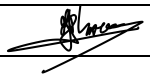
Approved by	Luis Batalla		26/10/2020

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Terms and Abbreviations

Abbreviation	Explanation
A	Alpha
AD	Advanced Drilling
ASC	Abandonment Support Cost
BEIS	Department for Business, Energy and Industrial Strategy
CoP	Cessation of Production
DP	Decommissioning Programme
EA	Environmental Appraisal
ESP	Electric Submersible Pumps
EUETS	EU Emissions Trading System
F-Gas	Fluorinated Gas
FSU	Floating Storage Unit
HLV	Heavy Lift Vessel
HSE	Health and Safety Executive
IMO	International Maritime Organisation
km	Kilometre
m	Metres
MARPOL	International Convention for the Prevention of Pollution from Ships
MAT	Master Application Template
MSF	Module Support Frame
N/A	Not Applicable
NORM	Naturally Occurring Radioactive Material
ODU	Offshore Decommissioning Unit
OEM	Oil Export Module
OGA	Oil and Gas Authority
OPEP	Oil Pollution Emergency Plan
OPOL	Offshore Pollution Liability Association
OPPC	Oil Pollution Prevention and Control
OPRED	Offshore Petroleum Regulator for Environment and Decommissioning
OSRL	Oil Spill Response

Abbreviation	Explanation
PL	Pipe Line (as in PL Number) / PLatform (Wells)
PLQ	Permanent Living Quarters
PON	Petroleum Operations Notice
PPC	Pollution Prevention and Control
PWA	Pipeline Works Authorisation
RSA	Radioactive Substances Activity
SALM	Single Anchor Leg Mooring
SAT	Subsidiary Application Template
SE	South East
SEPA	Scottish Environmental Protection Agency
SOPEP	Shipboard Oil Pollution Emergency Plans
SSW	South South West
Te	Tonnes
UK	United Kingdom
UKCS	United Kingdom Continental Shelf
UKHO	UK Hydrographic Office
WMP	Fulmar Waste Management Plan

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Number	Section	Description

1 EXECUTIVE SUMMARY

1.1 Fulmar & Auk North Preparation Work Scopes Decommissioning Programme[1]

Prior to formal approval of the Fulmar and Auk North Decommissioning Programmes (Facilities) and DP (Jacket), there are a number of decommissioning scopes that are required to be progressed to prepare for final decommissioning. This document contains the decommissioning scope of work that will be executed prior to formal approval of the DP (Facilities) and DP (Jacket). These scopes include:

- Development of the Decommissioning Programme including all studies, platform surveys, development of well abandonment solutions for the Fulmar A wells (Fulmar and Halley), Fulmar AD wells, and Auk North Wells;
- Development of Stakeholder engagement plan to present and facilitate engagement sessions with stakeholders;
- Asset Operations transition planning;
- Fulmar AD well abandonment;
- Fulmar A well intervention (Fulmar and Halley Wells);
- Fulmar A Well Abandonment (Fulmar and Halley Wells) including platform rig upgrades, commitments to module rigs, or hydraulic workover units or any potential topside removal;
- Upgrade of platform utility and safety systems will also be required to support the Well Abandonment Operations based on a platform based solution. The scope may take the form of inspection, modifications/upgrades as part of the enabling scopes to ensure that they are suitable to support the abandonment scopes.
- Engineering, Down and Cleaning of Fulmar A and Fulmar AD production facilities and supporting utilities.

1.2 Requirement for Decommissioning Programmes

Installations:

In accordance with the Petroleum Act 1998, the Section 29 notice holders of the Fulmar and Auk North installations/field (see Table 1-2) are applying to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) to obtain approval for decommissioning the installations detailed in Section 1.5 of these programmes.

Pipelines:

In accordance with the Petroleum Act 1998, the Section 29 notice holders of the pipelines (see Table 1-4) are applying to OPRED to obtain approval for decommissioning the pipelines detailed in Section 1.5 of these programmes.

In conjunction with public, stakeholder and regulatory consultation, the DPs are submitted in compliance with national and international regulations and OPRED guidelines.

1.3 Introduction

The Fulmar complex, comprising the main Fulmar Alpha platform and the bridge-linked Advanced Drilling (AD) wellhead jacket, is a fixed offshore drilling, production and accommodation

[1] The scope of this DP does not include any cutting and removal of conductors, and as such there will be no associated disturbance of the seabed. Any impacts will be assessed in subsequent permit applications.

installation, located in Block 30/16 of the Central Sector of the North Sea. The installation stands in 83m of water approximately 350km east of Dundee.

Development of the Fulmar field began in 1978 with first oil produced from the AD wellhead jacket to the Floating Storage Unit (FSU) in February 1982, followed by first oil from Fulmar Alpha in May 1982. Fulmar Alpha currently has 36 well slots and Fulmar AD has 6 well slots.

Fulmar Alpha imports metered oil from Clyde/Orion and Auk Alpha. The oil imports are combined within the oil export module (OEM) before being metered and exported via a subsea pipeline to the Norpipe system for onward processing at Teesside. Fulmar Alpha also receives conditioned metered Clyde gas for export via the St. Fergus pipeline.

The Auk North reservoir is located approximately 10.5 km southwest of the Fulmar Alpha platform and was developed as a subsea tie-back to the Fulmar Alpha platform. The development was produced from 4 wells each utilizing dual Electric Submersible Pumps (ESP), which are tied back to the Auk North subsea manifold and onto the Fulmar Alpha platform via an electro hydraulic control umbilical, flowline and conductor / riser arrangement.

Within the Fulmar Field are two redundant single anchor leg mooring (SALM) bases that supported the original oil export route from Fulmar Alpha via shuttle tanker. The SALM Bases were included within the previously approved Fulmar Oil Export Decommissioning Programme indicating that they will remain in situ to allow for potential re-use. The programme also stated that should no further use be identified the SALM Bases will be decommissioned at the same time as the other facilities in the Fulmar Fields.

Following public consultation, stakeholder and regulatory consultation, the Fulmar and Auk North preparation work scopes decommissioning programme is submitted in full compliance with OPRED guidelines

1.4 Overview of Installations/Pipelines Being Decommissioned

1.4.1 Installations

Table 1-1 Installations Being Decommissioned			
Fields:	**Fulmar & Auk North**	**Production Type (Oil/Gas/Condensate)**	**Oil / Gas**
Water Depth (m)	**83**	**UKCS block**	**30/16**

Table 1-2 Installations Section 29 Notice Holder Details		
Fulmar Alpha and AD		
Current Owner	**Registration Number**	**Equity Interest (%)**
Repsol Sinopec North Sea Limited	01061863	100%
Exited Parties	**Registration Number**	**Equity Interest (%)**
Repsol Sinopec Resources UK Limited	00825828	-
Shell U.K. Limited	00140141	-
Esso Exploration and Production UK Limited	00207426	-
Hess Limited	00807346	-
Fulmar Oil Export System / SALM Bases		
Current Owner	**Registration Number**	**Equity Interest (%)**
Repsol Sinopec North Sea Limited	01061863	100%
Exited Parties	**Registration Number**	**Equity Interest (%)**
Repsol Sinopec Resources UK Limited	00825828	-
Shell U.K. Limited	00140141	-
Esso Exploration and Production UK Limited	00207426	-
Hess Limited	00807346	-
Auk North		
Current Owner	**Registration Number**	**Equity Interest (%)**
Repsol Sinopec Resources UK Limited	00825828	100%
Repsol S.A.	ESA78374725	-

1.4.2 Pipelines, Umbilicals and Power Cables

Table 1-3 Fulmar and Auk North Pipelines Being Decommissioned		
Number of Pipelines	N/A	N/A
Number of Umbilicals	N/A	N/A
Number of Power Cables	N/A	N/A

Table 1-4 Pipelines Section 29 Notice Holder Details			
Pipeline Number	**Section 29 Notice Holder**	**Registration Number**	**Equity Interest (%)**
N/A	N/A	N/A	N/A

1.5 Summary of Proposed Decommissioning

The scopes covered by Fulmar & Auk North Preparation Work Scopes Decommissioning Programme are scopes being executed prior to formal approval of the full Decommissioning Programmes for (Facilities & Jacket). At the time of approval of the Decommissioning Programme (Facilities) this programme will be superseded.

Decommissioning Programme

The development of the Fulmar Decommissioning including all Project, Engineering, Procurement and offshore execution to deliver:

- Development of the Decommissioning Programmes (Facilities) and (Jacket) including all studies, development of well abandonment solutions for the Fulmar A wells (Fulmar and Halley), Fulmar AD wells, and Auk North Wells;
- Execution of surveys including platform, pipelines and structures, and environmental surveys to support the development of the Decommissioning Programmes (Facilities & Jackets);
- Asset operations transition, planning and execution including the operation of the Fulmar platform and associated infrastructure to support decommissioning activities in the period following CoP and prior to final decommissioning and removal of the facilities;
- Fulmar AD well abandonment;
- Fulmar A well intervention (Fulmar and Halley Wells);
- Fulmar A Well Abandonment (Fulmar and Halley Wells) including platform rig upgrades, commitments to module rigs, or hydraulic workover units or any potential topside removal;
- Engineering, Down and Cleaning of Fulmar A and Fulmar AD production facilities and supporting utilities.
- Selection of integrated decommissioning option including well abandonment;

Abandonment Expenditure

Fulmar CoP (Fulmar Native Production) was agreed on 8th October 2018. The Fulmar A platform continues to operate as production export hub for the Auk and Clyde facilities. During this period, transition operations will also be undertaken as will decommissioning activities with the aim of reducing Abandonment Support Costs (ASC).

Key decommissioning scopes to be executed during this period to reduce risk post CoP and to support the reduction in the ASC are:

- Drain and Flushing of Plant associated Fulmar native productions;
- Air gapping of redundant plant to eliminate maintenance burden;
- Electrical / Instrument / Telecom Isolations to eliminate maintenance burden; and
- Reconfigurations of facilities, drains, flares to reduce integrity and maintenance burden.

Fulmar A Well Intervention (Plugging)

Currently there is a well plugging campaign ongoing with four (of seven) well scopes complete. Executing the scope ensures that the wells are at a suitable status:

- To reinstate well integrity prior to rig reactivation;
- Make wells safe and provide barriers for rigging up to perform abandonment workscopes; and
- Provide information to inform and optimise final well abandonment designs.

Fulmar A wells are continually monitored and based on preventive maintenance routine data additional wells may require plugging.

Fulmar AD – Well Abandonment

This scope has been executed during 2019. The wells have been Phase 1 and Phase 2 abandoned of the 5 Fulmar AD wells. The scope included:

- Project management and planning for AD well abandonment Phases 1 and 2;
- External studies and surveys to support AD well abandonment;
- Execution of Jack-up and Well services contracts to support the contract;
- Preparation of AD platform enabling and SIMOPS preparation work prior to well abandonment campaign activities;
- Jack up Rig interface works with Fulmar AD Platform;
- Fulmar AD well abandonment Phases 1 and 2; and
- Jack-up Rig de-interface works with the Fulmar AD platform on completion of Well Abandonment activities.

Fulmar A – Well Abandonment

The Fulmar A well abandonment (Fulmar and Halley) scope includes:

- Project management and planning for Fulmar A well abandonment;
- External studies and surveys to support Fulmar A well abandonment; and
- P&A Equipment and Rig Preparatory works.

Upgrade of platform utility and safety systems will also be required to support the Well Abandonment Operations based on a platform based solution. The scope may take the form of inspection, modifications/upgrades as part of the enabling scopes to ensure that they are suitable to support the abandonment scopes.

The Fulmar A well abandonment is a platform based solution. A platform based solution could be:

- Rig Reactivation;
- Hydraulic Workover Unit (HWOU); or
- Modular Rig;

The current plan is based on rig reactivation however the final well abandonment solution will be based on the best option captured within a request for information to the market and mapped within the contracting strategy of the decommissioning programme. This information will allow a competitive bid process in order to confirm the most cost-effective solution for this scope.

Engineering Down and Clean (EDC) / Not Normally Attended (NNA) modifications

To minimise ASC and prepare the Fulmar and Auk North facilities for decommissioning there is a requisite to:

- Clean hydrocarbon systems, isolate energy sources and release stored pressure to reduce or eliminate maintenance burden thereby reducing ASC.
- Undertake preparatory work required to reduce manning and prepare the facilities for Not Normally Attended (NNA)operations.

1.6 Field Location Including Field Layout and Adjacent Facilities

Figure 1.1: Field Location in UKCS

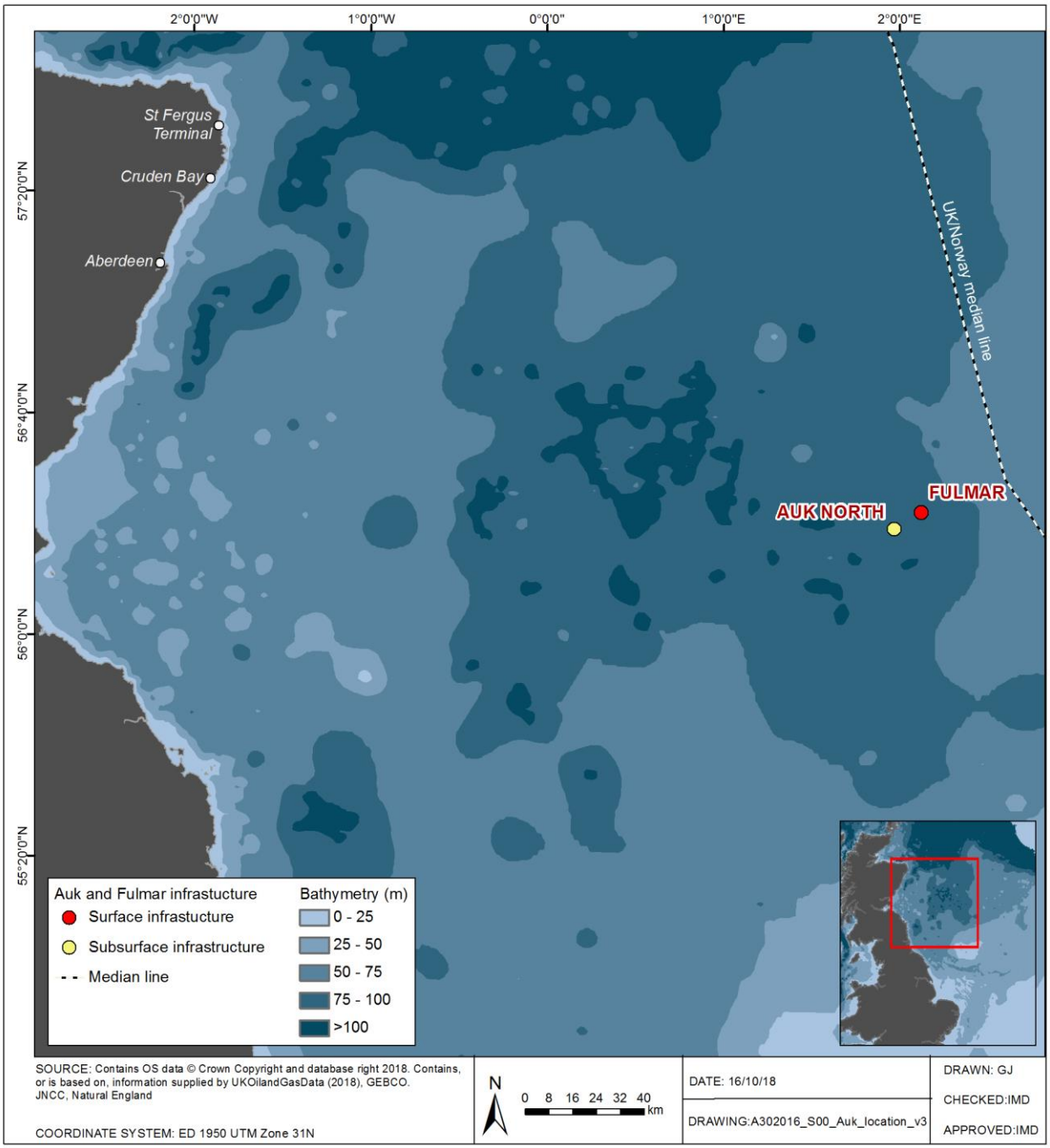
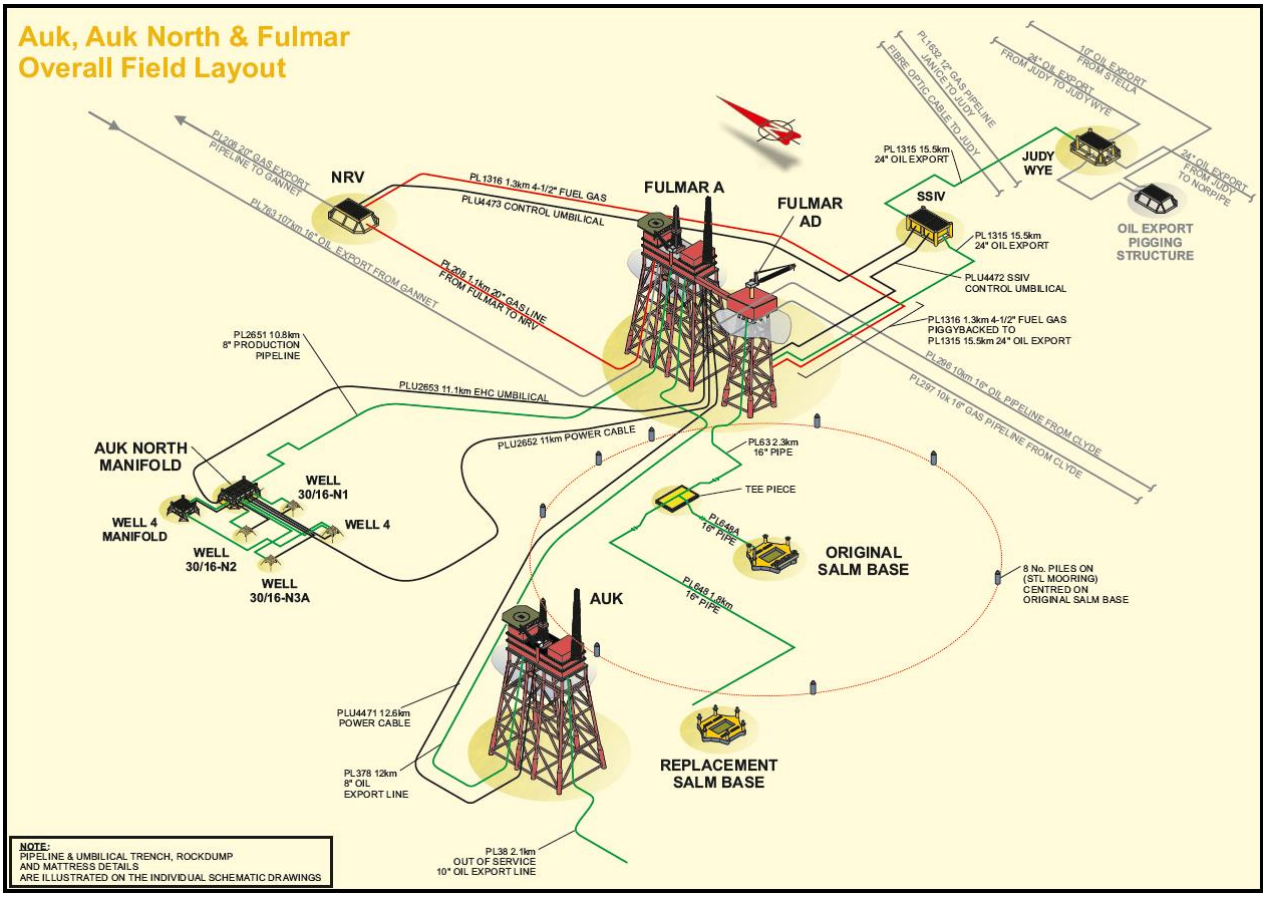


Figure 1.2: Field Layout

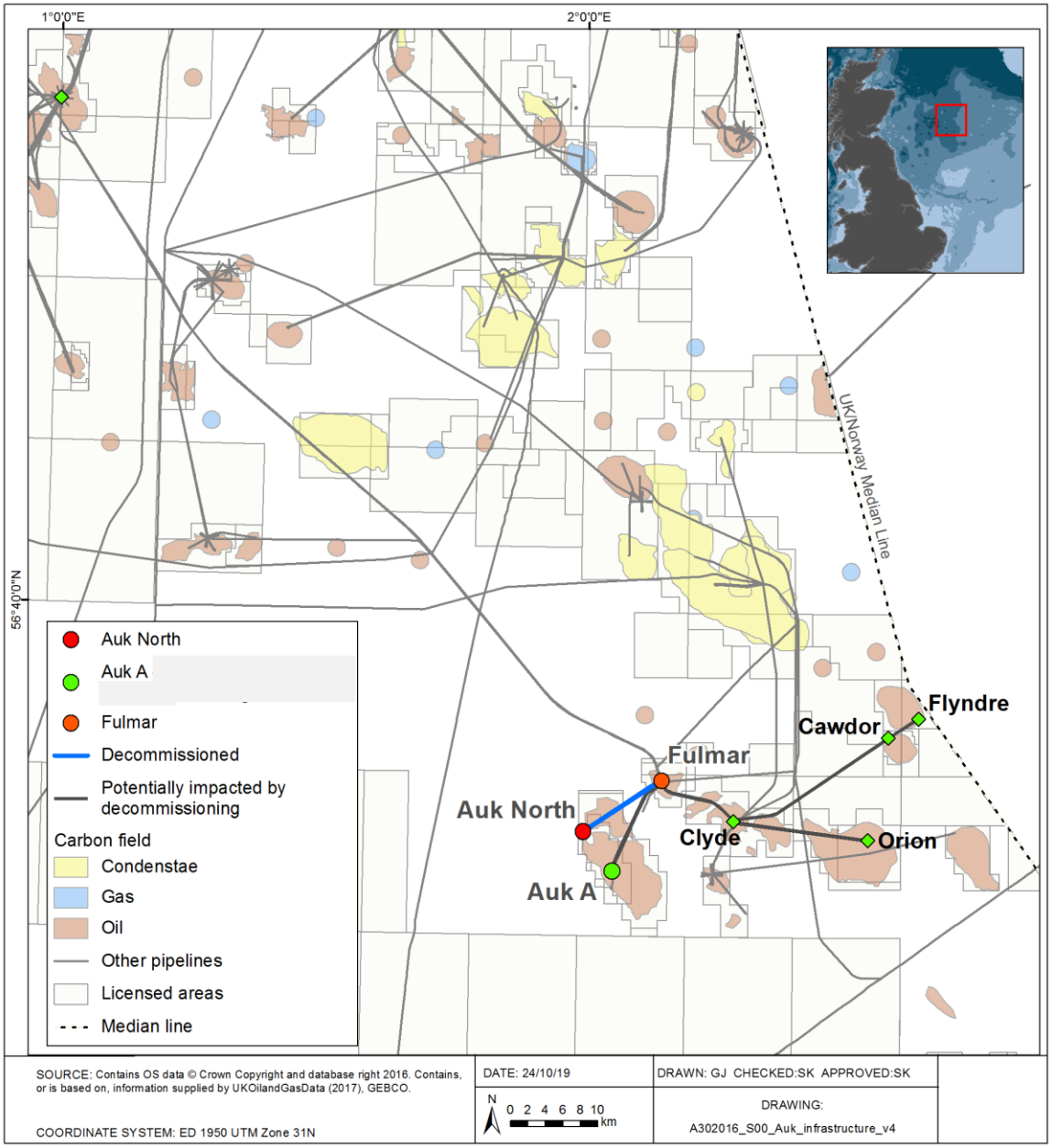


The adjacent facilities shown in Table 1-5 reflect those directly connected or crossed by the infrastructure being decommissioned as part of these programmes only.

Table 1-5: Adjacent Facilities

Owner	Name	Type	Distance/Direction	Information	Status
Repsol Sinopec Resources UK Limited	Clyde	Platform	9.4km SE	Oil and Gas is exported to Fulmar Alpha for onward transmission to shore.	Operational
Repsol Sinopec Resources UK Limited	Auk	Platform	11.8km SSW	Oil is exported to Fulmar Alpha for onward transmission to shore.	Operational

Figure 1.3: Adjacent Facilities



1.7 Industrial Implications

Repsol Sinopec Resources UK Limited will develop a contracting strategy during the development of the wider Decommissioning Programmes (Facilities and Jacket) with the objective of achieving an efficient and cost effective execution of the decommissioning works. A Supply Chain Action Plan (SCAP) will subsequently be developed.

Repsol Sinopec Resources UK Limited will endeavour to combine Fulmar and Auk North decommissioning activities with other developments or decommissioning activities to reduce mobilisation costs should the opportunity arise. The decommissioning schedule is extended to allow flexibility for when decommissioning operations are carried out and completed.

The scopes defined in this document will be competitively tendered or use existing frame contracts which have been subject to a competitive tendering process.

2 DESCRIPTION OF ITEMS TO BE DECOMMISSIONED

2.1 Installations: Surface Facilities

Table 2-1: Surface Facilities Information									
Name	Facility Type	Location		Topsides/Facilities		Jacket			
				Weight (Te)	Number of Modules	Weight (Te)	Number of Legs	Number of Piles	Weight of Piles (Te)
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

2.2 Installations: Subsea including Stabilisation Features

Table 2-2: Subsea Installations and Stabilisation Features					
Subsea installations including Stabilisation Features	Number	Size/Weight (Te)	Location		Comments/Status
N/A	N/A	N/A	N/A	N/A	N/A

2.3 Pipelines Including Stabilisation Features

Table 2-3: Pipeline/Flowline/Umbilical Information									
Description	Pipeline No. (as per PWA)	Diameter (inches)	Length (km)	Description of Component Parts	Product Conveyed	From – To End Points	Burial Status	Pipeline Status	Current Content
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Description	Pipeline No. (as per PWA)	Diameter (inches)	Length (km)	Description of Component Parts	Product Conveyed	From – To End Points	Burial Status	Pipeline Status	Current Content
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 2-4: Subsea Pipeline Stabilisation Features				
Stabilisation Feature	**Total Number**	**Weight (Te)**	**Locations**	**Exposed/Buried/Condition**
N/A	N/A	N/A	N/A	N/A

2.4 Wells

Table 2-5: Well Information				
Fulmar Alpha Well Information				
Field	**Platform Wells**	**Designation**	**Status**	**Category of Well**
Fulmar	30/16-F5	Oil Production	Plugged	PL 4-0-4
Fulmar	30/16-F36 (also F11)	Oil Production	Shut In	PL 4-0-4
Fulmar	30/16-F27	Water Injection	Plugged	PL 4-0-3
Fulmar	30/16-F30	Oil Production	Plugged	PL 4-0-4
Fulmar	30/16-F15	Water Injection	Plugged	PL 4-0-4
Fulmar	30/16-F24	Oil Production	Shut In	PL 3-0-4
Fulmar	30/16-F9Z (Also F9, F9J)	Water Injection	Shut In	PL 4-0-4
Fulmar	30/16-F23K (Also F23, 23J)	Water Injection	Cement Plug	PL 3-0-3
Fulmar	30/16-F16	Water Injection	Cement Plug	PL 4-0-4
Fulmar	30/16-F34 (also FA10, F3)	Oil Production	Shut In	PL 4-0-4
Halley	30/16-F38Y	Oil Production	Shut In	PL 4-0-3
Fulmar	30/16-F7	Water Injection	Shut In	PL 4-0-4
Fulmar	30/16-F32 (also F17)	Oil Production	Shut In	PL 4-0-4
Fulmar	30/16-F22	Oil Production	Shut In	PL 4-0-4
Fulmar	30/16-F21	Oil Production	Plugged	PL 4-0-4
Fulmar	30/16-F1	Oil Production	Plugged	PL 4-0-4
Fulmar	30/16-F25Z (Also F25)	Oil Production	Shut In	PL 4-0-4
Fulmar	30/16-F35 (also F20)	Oil Production	Shut In	PL 3-0-4
Fulmar	30/16-F28	Water Injection	Plugged	PL 4-0-3
Fulmar	(Auk North Riser)	(Auk North Riser)	N/A	N/A
Fulmar	30/16-F12	Water Injection	Shut In	PL 4-0-4
Fulmar	(Conductor only)	(Conductor only)	N/A	PL 0-0-3
Fulmar	30/16-F19	Oil Production	Cement Plug	PL 4-0-3
Fulmar	(Conductor only)	(Conductor only)	N/A	PL 0-0-3
Fulmar	30/16-F2	Oil Production	Plugged	PL 4-0-4
Fulmar	30/16-F18	Oil Production	Shut In	PL 4-0-4
Fulmar	30/16-F13Z (Also F13)	Oil Production	Shut In	PL 4-0-4
Fulmar	30/16-F10	Water Injection	Shut In	PL 4-0-4
Fulmar	30/16-F31	Water Injection	Plugged	PL 4-0-3

Fulmar	30/16-F14	Oil Production	Shut In	PL 4-0-4
Fulmar	30/16-F4	Water Injection	Plugged	PL 4-0-4
Halley	30/16-F37	Oil Production	Shut In	PL 4-0-3
Fulmar	30/16-F33Z (also F29, F29J, F33)	Oil Production	Plugged	PL 4-0-3
Fulmar	(Conductor only)	(Conductor only)	N/A	PL 0-0-3
Fulmar	30/16-F8	Water Injection	Cement Plug	PL 4-0-4
Fulmar	30/16-F26K (Also F26, F26J)	Water Injection	Plugged	PL 4-0-3
Fulmar AD Well Information				
Field	**Platform Wells**	**Designation**	**Status**	**Category of Well**
Fulmar	30/16-T03Z	Oil Production	Phase 2 abandoned	0-0-1
Fulmar	30/16-T02	Oil Production	Phase 2 abandoned	0-0-1
Fulmar	30/16-T05	Oil Production	Phase 2 abandoned	0-0-1
Fulmar	30/16-T01	Oil Production	Phase 2 abandoned	0-0-1
Fulmar	30/16-T04	Oil Production	Phase 2 abandoned	0-0-1
Fulmar	(Conductor Only)	(Conductor Only)	N/A	0-0-3
Auk North Well Information				
Field	**Subsea Wells**	**Designation**	**Status**	**Category of Well**
Auk North	30/16-N1	Oil Production	Shut In	3-3-1
Auk North	30/16-N2	Oil Production	Shut In	3-2-1
Auk North	30/16-N3	Oil Production	Shut In	3-3-1
Auk North	30/16-N4	Oil Production	Shut In	3-2-1

For details of well categorisation see the Oil and Gas UK Well Decommissioning Guidelines, Issue 6, June 2018.

2.5 Drill Cuttings

N/A

Table 2-6: Drill Cuttings Pile Information		
Location of Pile Centre (Latitude/Longitude)	**Seabed Area (m^2)**	**Estimated volume of cuttings (m^3)**
N/A	N/A	N/A

2.6 Inventory Estimates

The Fulmar and Auk North preparation scopes described within this Decommissioning Programme do not plan to recover any of the key materials used in the make-up of the Fulmar Alpha, AD and Auk North installations and will generate only limited waste materials which will be clearly labelled and identified as 'decommissioning waste'.

Table 2-7: Fulmar Installations Estimated Inventory							
	Weight (tonnes)						
	Ferrous	Non-Ferrous	Plastic	Hazardous/ NORM	Concrete	Other	Total
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 2-8: Fulmar Pipelines Estimated Inventory							
	Weight (tonnes)						
	Ferrous	Non-Ferrous	Plastic	Hazardous/ NORM	Concrete	Other	Total
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 2-9: Auk North Installations Estimated Inventory							
	Weight (tonnes)						
	Ferrous	Non-Ferrous	Plastic	Hazardous/ NORM	Concrete	Other	Total
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 2-10: Auk North Pipelines Estimated Inventory							
	Weight (tonnes)						
	Ferrous	Non-Ferrous	Plastic	Hazardous/ NORM	Concrete	Other	Total
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

3 REMOVAL AND DISPOSAL METHODS

On removal and where practical, Repsol Sinopec Resources UK Limited will always ensure the principles of the waste hierarchy will be met in the handling of materials from Fulmar Area Decommissioning to maximize the amount of material which can be reused or recovered/recycled.

The removal of the Fulmar Area infrastructure will be addressed in the DP (Facilities) and DP (Jacket).

Waste associated with preparatory workscopes described within this DP, will be handled in accordance with the Fulmar Waste Management Plan (WMP), utilising the existing waste carriers and disposal contractors. The Fulmar WMP will be updated to ensure that the need to clearly label and identify waste as 'decommissioning waste' is accurately defined, along with any updates required to the Roles and Responsibilities.

The selection of a disposal yard contractor has not yet been finalised by Repsol Sinopec Resources UK Limited. However, if the selected disposal yard is in a country outside of the UK, the waste will be dealt with in line with the receiving country's waste legislation taking account of any required applications, reporting or notifications under the Trans-frontier Shipment of Waste Regulations 2007.

3.1 Topsides Decommissioning Overview

3.1.1 Fulmar Alpha Topsides

The Fulmar Alpha installation comprises a modular layout arranged upon three working decks employing an end bay drilling concept, Refer to Figure 3.1 and Figure 3.2.

Figure 3.1: Fulmar Alpha and AD Topsides

Modules M1 to M6 are mounted directly on the Module Support Frame (MSF) with the Production Deck level. Mezzanine levels are provided on the west side of M1 and M2 and mezzanine level access platforms are provided for equipment in M3, M4, M5 and M6. The Molsieve Module is a cantilever which overhangs the east side of the Platform outboard of M5. The Oil Export Module cantilever overhangs the west side of the Platform outboard of M6. The Switchgear and Instrumentation Module is a single deck module located on M2 roof. In addition, the Single Lift Module is located on the northern side of the M2 roof next to the Living Quarters. The Permanent Living Quarters (PLQ) consist of a five level module mounted on top of M1.

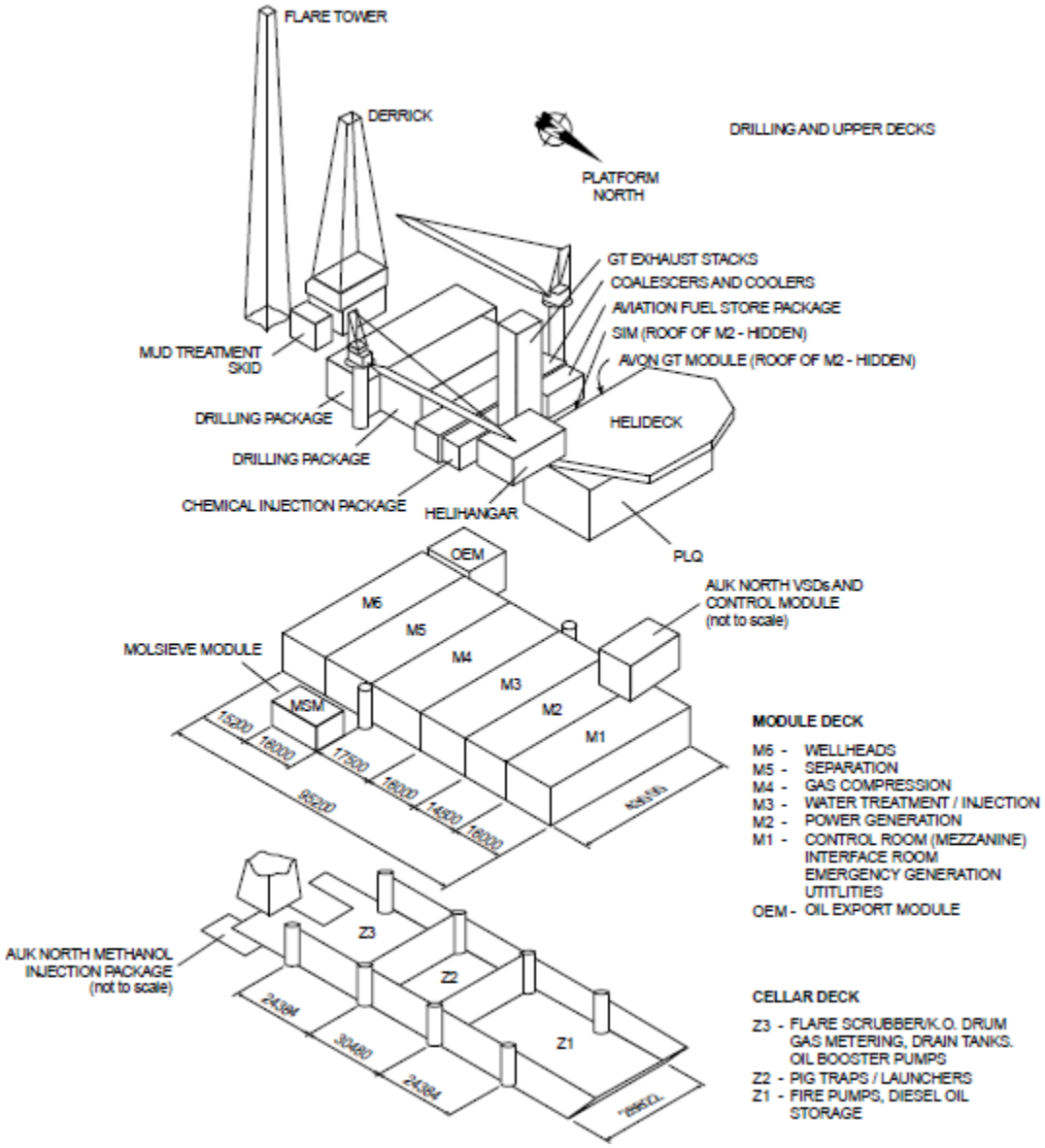
The Flare Tower is situated on the southeast corner of the platform above the Cellar Deck area Z3 whilst two crane pedestals are located on the East and West sides of the Platform. The North and South Drilling Modules are located above M4 and M5 respectively. The modules each incorporate a mezzanine level, covering part of the plan area, while the roof area forms part of the pipedeck.

In general, the facilities are arranged with the main hazard risks, Drilling and Process located to the South, while the accommodation, utilities and power generation are located to the North of the Installation.

The Fulmar A topsides was installed using Heerema's Hermod HLV. The Hermod commenced with installing the cellar deck in three sections, north, south and centre, in that sequence, and welded up. The bridge to 'AD' was installed next followed by the flare tower. Thereafter, the

Hermod proceeded to install each of the original modules in a specific sequence, concluding with the installation of the PLQ on to the roof of M1; followed by the generator exhaust towers, with the top section of the towers guided on the PLQ.

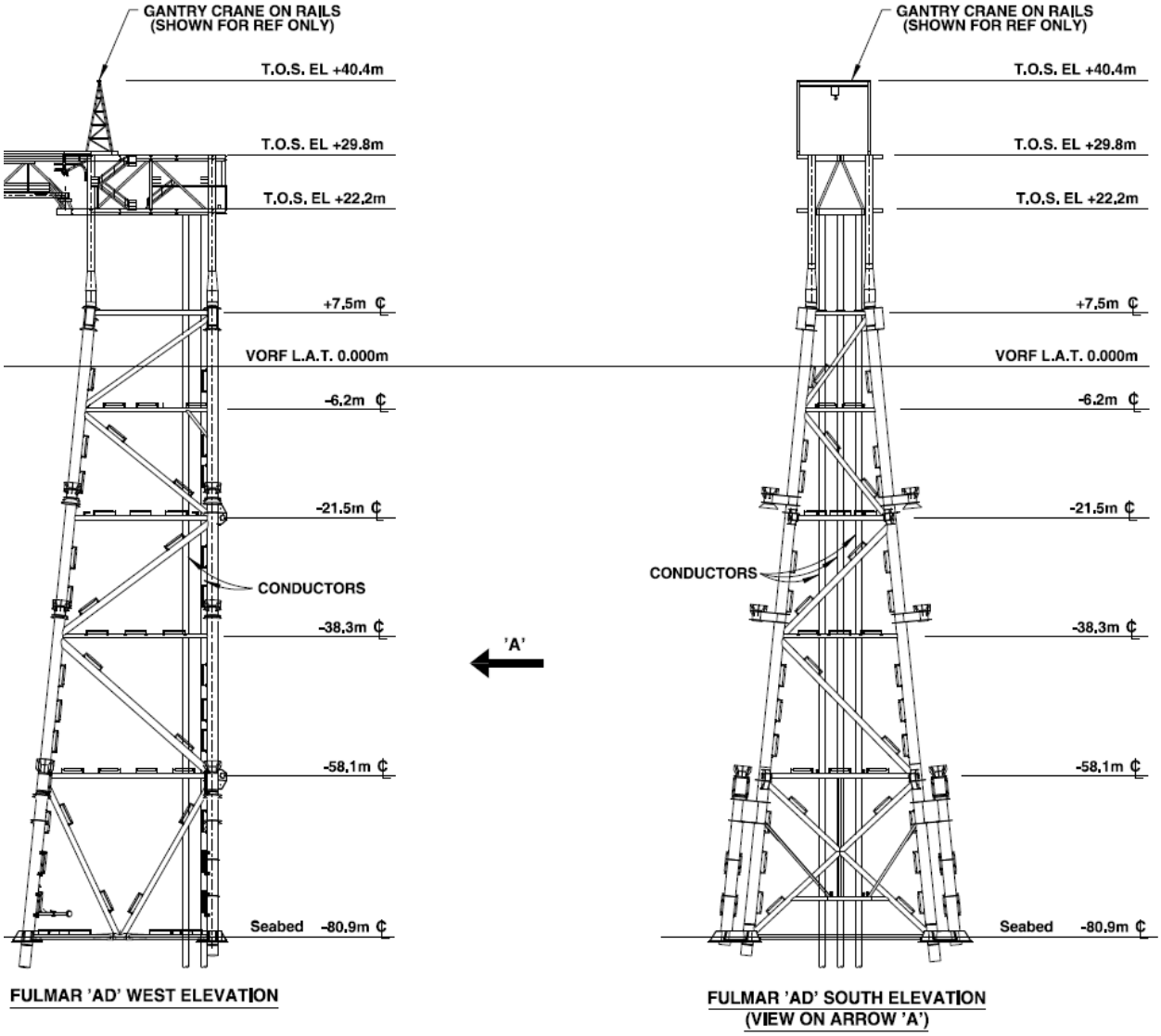
Figure 3.2: Diagram of Fulmar Alpha Modules



3.1.2 Fulmar AD Topsides

Fulmar AD is a bridge linked wellhead platform comprising a two-deck main structure and mezzanine, which provides wellhead facilities (including the oil export and fuel gas import riser valves) and emergency facilities.

Figure 3.3: Diagram of Fulmar AD Topsides



3.2 Jackets/Substructures

N/A

3.3 Wells

Table 3-1: Well Plug and Abandonment
The Fulmar development consists of 37 wells, whilst the Auk North development consists of 4 wells. These wells (captured in Table 2.5) will be plugged and abandoned in accordance with the latest version of the Oil & Gas UK Wells Decommissioning Guidelines (Issue 6, June 2018). A Master Application Template (MAT) and the supporting Subsidiary Application Template (SAT) will be submitted in support of the works carried out. A PON 5 will also be submitted to OGA for application to abandon the wells.

4 ENVIRONMENTAL APPRAISAL

The Fulmar and Auk North preparation scopes described within this decommissioning programme should not have any impact around Fulmar A and AD platforms. Only intervention scopes subsea have been considered within Auk North.

4.1 Environmental Sensitivities (Summary)

Table 4-1: Environmental Sensitivities	
Environmental Receptor	**Main Features**
Atmosphere	Emissions to atmosphere offshore might arise from the vessels used to carry out any intervention within the Auk North subsea wells.

4.2 Potential Environmental Impacts and their Management

4.2.1 Environmental Appraisal Summary

The Environmental Appraisal (EA) identifies potential environmental impacts by identifying interactions between the proposed decommissioning activities and the local environment while considering responses from stakeholders. The EA also details mitigation measures designed to avoid and reduce the identified potential environmental impacts and describes how these will be managed in accordance with the Repsol Sinopec Resources UK established Environmental Management System (EMS).

Following an assessment of the key potential impacts through an environmental issues identification workshop and subsequent risk assessment, the EA concludes that the recommended options to decommission the Auk, Fulmar and Auk North facilities can be completed without causing significant impact to the environment. Those activities that had a potential for a significant impact are summarised in Table 4-2, along with the proposed environmental management.

Table 4-2: Environmental Impact Management

Activity	Main Impacts	Management
Preparatory Decommissioning Workscopes	Atmospheric Emissions	• Existing Fulmar Atmospheric Permits, i.e. PPC, F-Gas and EUETS and associated management procedures. • Vessels will be audited as part of selection and pre-mobilisation. • Work programmes will be planned to optimise vessel time in the field. • All generators and engines will be maintained and operated to the manufacturers' standards to ensure maximum efficiency. • Fuel consumption will be minimised by operational practices and power management systems for engines, generators and other combustion plan and maintenance systems. • Vessels will use ultra-low Sulphur fuel in line with MARPOL requirements.
	Discharges to Sea	• Existing Fulmar Discharge Permits, i.e. OPPC, RSA and Chemical Permits (Operations/Wells) and associated management procedures. • IMO Ballast Water Management Convention, Inc. Ballast water plan/log book. • Discharges in line with IMO/MARPOL standards. • Compliance with Repsol Sinopec UK's marine assurance standards. • Sewage and organic waste from galley macerated prior to discharge.

Table 4-2: Environmental Impact Management		
Activity	**Main Impacts**	**Management**
	Underwater Noise	• Machinery and equipment well-maintained and in good working order. • The number of vessels utilising dynamic positioning will be minimised. • Repsol Sinopec UK will minimise risk to marine mammals from underwater noise throughout operations in-line with industry guidance.
	Physical Presence	• A 500 m safety zone will remain around the installations. • Campaign, logistics, sharing vessels (across Repsol Sinopec UK portfolio) optimising vessels to minimise use. • UKHO standard communication channels including Kingfisher, Notice to Mariners and radio navigation warnings. • Collision risk assessment. • Ongoing Stakeholder consultation.
	Waste	• Existing Fulmar Waste Management Plan prioritising reuse and recycling. • Repsol Sinopec UK waste management strategy • Licensed contractors/sites will continue to be used for all waste related management. • Contractor to maintain a waste audit trail through to Final Disposal Point • Contractor to report waste inventories • Audits of yard/contractor waste management systems
	Other Users of the Sea	• The mandatory 500m safety zone will remain around the Fulmar infrastructures during the preparatory decommissioning activities. • Repsol Sinopec UK have undertaken a shipping assessment prior to the Fulmar decommissioning operations. • Appropriate notifications and maritime notices will be made as required. • All vessel activities will be in accordance with national and international regulations. • Appropriate navigation aids will be used in accordance with the consent to locate conditions to ensure other users of the sea are made aware of the presence of vessels. • The number of vessels standing by at Fulmar will be kept to a minimum. • On-going consultation with fisheries representatives.

Table 4-2: Environmental Impact Management		
Activity	**Main Impacts**	**Management**
	Accidental Spills	• The Fulmar Oil Pollution Emergency Plan (OPEP) has been produced in accordance with the Merchant Shipping (Oil Pollution Preparedness, Response & Co-operation Convention) Regulations 1998 and the Offshore Installations (Emergency Pollution Control) Regulations 2002. This OPEP will be updated in line with operational stages as required throughout the preparation and decommissioning lifecycle. • Repsol Sinopec UK have specialist oil spill response services provided by OSRL and are members of the OPOL. • Any spill originating from the vessels during the preparatory decommissioning operations will be controlled under the installation OPEP. Any accidental spill to sea out-with the 500m safety zone will be managed by individual vessel Shipboard Oil Pollution Emergency Plans (SOPEP). • Repsol Sinopec UK will conduct all operations in a controlled manor with trained personnel using suitable equipment. • All vessels will have suitable spill containment kits and an efficient spill response process is in place. • Repsol Sinopec UK routinely swap out perishable equipment such as hoses, and a management programme is implemented to ensure their integrity. • Prior to the transfer of materials, visual checks and pre-bunkering checklists are undertaken by trained personnel in communication with the standby vessel. • Releases reported and dealt with immediately by competent personnel and reported to the appropriate authorities.

5 INTERESTED PARTY CONSULTATIONS

This Fulmar & Auk North Preparation Work Scopes Decommissioning Programme require to be issue for consultation. The table below will be populated when stakeholder feedback becomes available in subsequent versions of this Fulmar and Auk North Preparation Scopes Decommissioning Programme.

Table 5-1: Summary of Stakeholder Comments		
UK		
Stakeholder	**Comment**	**Response**
Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) – Offshore Decommissioning Unit (ODU)		
OPRED/– Environmental Management Team		
Health and Safety Executive (HSE)	N/A	N/A
Oil and Gas Authority (OGA)	N/A	N/A
Scottish Environmental Protection Agency (SEPA)	N/A	N/A

6 PROGRAMME MANAGEMENT

6.1 Project Management and Verification

Repsol Sinopec Resources UK Limited has established a multi-disciplinary team lead by a Project Manager responsible for the implementation of activities and co-ordination of all services. An execution plan will align with established Repsol Sinopec Resources UK Limited Health, Safety and Environmental policies and meet all relevant legislative requirements. A contracting strategy will be based on Repsol Sinopec Resources UK Limited procurement and contract policies, including competitive tendering for all contractor services. Where possible, activities will be co-ordinated with other decommissioning operations and take account of any initiatives promoted by the OGA. Repsol Sinopec Resources UK Limited will report regularly on the execution of the decommissioning programmes to OPRED and discuss any changes in plans in advance.

6.2 Schedule

The Fulmar and Auk North preparation Work Scopes Decommissioning Programme schedule will be developed as part of the overall decommissioning programme.

Repsol Sinopec Resources UK Ltd will execute the decommissioning of the assets utilising an approach that executes projects via a series of interlinked sub projects referred to as Nested Projects. These projects combined together will make up the overall decommissioning project for an asset. The scopes proposed in this Decommissioning programme are presented in Section 1.1 and key dates / milestones outline in the table below:

Activity	Dates	Note
Decommissioning Programme	2017 – 2021	1 & 2
Abandonment Expenditure	8th Oct 2018 – 2021	3
Fulmar A Plugging	2018- 2021	1
Fulmar AD Well Abandonment	2017- 2020	1
Fulmar A Well Abandonment	2020- 2021	1 & 2
EDC/NNA Modifications	2019- 2021	1 & 2
Note 1 – DP (facilities) – Forecast Approval Q2 2021 This Preparation Work Scopes Decommissioning Programme contains the decommissioning scope of work that will be executed prior to formal approval of the DP (Facilities)		
Note 2 – Repsol Sinopec Resource UK Limited operate a gated approval process to progressively define and approve scopes for execution. Subsequent phases of this scope will be executed after the dates listed. This will be presented in the formal approval of the DP (Facilities).		
Note 3 – Abandonment expenditure will continue pass this date. This will be presented in the formal approval of the DP (Facilities) and DP (Jacket).		

6.3 Costs

Repsol Sinopec Resources UK Limited has used the Oil and Gas UK work breakdown structure to develop cost estimates for the Fulmar and Auk North preparation work scopes decommissioning programme. The provisional estimated costs have been provided to OPRED in confidence.

6.4 Close Out

Due to the nature of the scopes presented within this Decommissioning Programme they will not be fully executed prior to full approval of the Facilities Decommissioning Programme. Project close outs will be part of the Facilities decommissioning Programme scope.