ROCKROSE ENERGY BRAE AREA

Brae Alpha West Drilling Rig Decommissioning Programme

14th August 2019 103







Document Control

Approvals

	Name	Date
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Reviewed by	David Wilson Decommissioning Manager	14 th August 2019
Approved by	Alistair Buchan General Manager	14 th August 2019

Revision Control

Revision No	Reference	Changes/Comments	Issue Date
1	First Draft for OPRED Review	In consultation with OPRED, Marathon Oil separated the Brae Alpha West Drilling Rig from Brae Alpha, Brae Bravo, Central Brae, West Brae and Sedgwick post consultation decommissioning programmes [1] to form the current document, which contains no material change to any decommissioning proposals, other than bringing forward the date of decommissioning West Drilling Rig.	May 2019
2	Second Draft	Revised to incorporate OPRED Comments	June 2019
3	Final Version	Change from Marathon Oil to RockRose UKCS8 LLC	August 2019

Distribution List

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Terms and Abbreviations

BEIS Department of Business, Energy and Industrial Strategy

LLC Limited Liability Corporation

MARPOL International Convention for the Prevention of Pollution from Ships

N/A Not Applicable

NORM Naturally Occurring Radioactive Material

OGA Oil and Gas Authority

OPEP Oil Pollution Emergency Plan

OPRED Offshore Petroleum Regulator for Environment and Decommissioning

OSPAR Oslo Paris Convention

SAC Special Area of Conservation SFF Scottish Fishermen's Federation

te Tonnes

UKCS UK Continental Shelf

WGS84 World Geodetic System 1984 WWF World Wide Fund for Nature



1 Executive Summary

1.1 Decommissioning Programme

As required by the Petroleum Act 1998, amended by the Energy Act 2008, this document contains the decommissioning programme for West Drilling Rig on the Brae Alpha installation.

The rest of the Brae Alpha topsides, the Brae Alpha jacket / sub-structure and the associated subsea equipment are the subjects of separate decommissioning programmes [1]. The Brae Alpha large steel jacket/sub-structure is subject to separate derogation application processes under OSPAR Decision 98/3.

1.2 Requirement for Decommissioning Programme

1.2.1 Installations

In accordance with the Petroleum Act 1998, as amended, RockRose UKCS8 LLC as operator of the Brae Alpha platform, and on behalf of the Section 29 Notice Holders (see <u>Table 1.2</u>) is applying to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) to obtain approval for decommissioning the Brae Alpha West Drilling Rig as described in <u>Section 2.1</u> of this document. (See also <u>Section 7</u> – Partners' Letters of Support).

1.3 Introduction

The Brae Alpha installation is located in UKCS Block 16/7a, approximately 270km north-east of Aberdeen, in a water depth of 112m. The platform has modular topsides and a steel jacket/substructure. Brae Alpha started production in 1983.

When the platform was built, two drilling rigs were installed to facilitate efficient drilling of all of the platform wells. The West Drilling Rig was isolated in 2013 due to drag chain integrity issues. The West Drilling Rig now obstructs access to the west wells for plug and abandonment. RockRose UKCS8 LLC therefore proposes to decommission and remove the West Drilling Rig to allow P&A of the west wells by the East Drilling Rig.

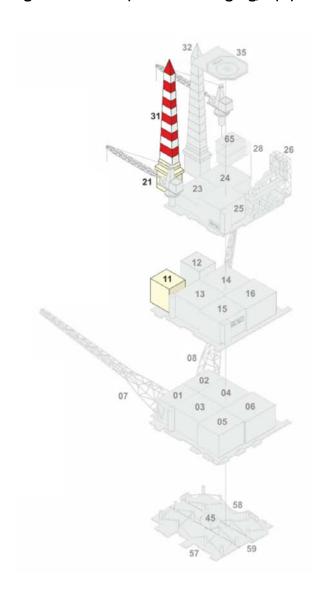
1.3.1 Scope of Decommissioning Programme

The decommissioning programme contained in this document covers the following facilities:

The Brae Alpha platform West Drilling Rig comprising Modules 11, 21, and 31, the skidding module, the sub-structure and the derrick.

This equipment is shown in Figure 1.1.

Figure 1.1: Brae Alpha West Drilling Rig; Equipment to be Decommissioned



Modules to be Decommissioned

- 11 Skidding Module (West)
- 21 Drilling Rig Sub-structure (West)
- 31 Drilling Rig (West)

Modules Remaining

- 01 Wellhead (West)
- 02 Wellhead (East)
- 03 Production Train A
- 04 Production Train B
- 05 Utilities
- 06 Refrigeration/NGL
- 07 Flare Boom (West)
- 08 Flare Boom (East)
- 12 Skidding Module (East)
- 13 Gas Compression
- 14 Selexol
- 15 Living Quarters (Lower)
- 16 Switchgear
- 22 Drilling Rig Sub-structure (East)
- 23 Drilling Module (West)
- 24 Drilling Module (East
- 25 Living Quarters (Upper)
- 26 Power Generation Waste Heat Recovery
- 28 ALQ
- 32 Drilling Rig East
- 35 Helideck
- 45 Diving Module
- 57 Module Support Frame (West)
- 58 Module Support Frame (East)
- 59 Module Support Frame Field Splice
- 65 Export Gas Compression

1.3.2 Decommissioning Programme Outline

Brae Alpha West Drilling Rig will be de-energised, residual fluids will be removed and systems flushed, vented and cleaned as required. It will then be removed to shore for recycling and appropriate disposal.



1.4 Overview of Facilities Being Decommissioned

Table 1.1: Facilities Being Decommissioned					
Field(s)	Brae	Production Type (Oil/Gas/Condensate)	All fields are Oil/Gas/Condensate		
Water Depths (m)	112	UKCS Block	16/7a		
Distance to Median Line (km)	3	Distance From Nearest UK Coastline(km)	190		
Description of Area being Decommissioned			Well Type	Number of Wells	
The facilities to be decommissioned consist of West Drilling Rig consisting of Modules 11, 21, and 31. There are two drilling rigs on the platform, the East Drilling Rig has been modified to conduct Plugging and Abandonment of all platform wells.			NI /A	N/A	
The West Drilling Rig is currently obstructing access to some of the well slots. RockRose UKCS8 LLC will therefore remove the West Drilling Rig to provide access for the East Drilling Rig to all the platform well slots for plugging and abandonment.					

Description of Work to Be Undertaken

The West Drilling Rig will be cleaned of residual hydrocarbons, residual drilling fluids and chemicals, and isolated from power sources. The facilities will be removed from the platform by single lift, piece small, piece medium or a hybrid of these methods. The decommissioned drilling rig will be taken to an appropriately licenced facility onshore for recycling or disposal.

Table 1.2: Brae Alpha Section 29 Notice Holders		
Section 29 Notice Holders	Registration Number	Equity Interest
RockRose UKCS8 LLC	FC009587	40.0%
TAQA Bratani Limited	5975475	41.7%
Spirit Energy Resources Limited	2855151	8.0%
JX Nippon Exploration and Production (U.K.) Limited	3288689	6.3%
TAQA Bratani LNS Limited	6230540	4.0%
BP Exploration Operating Company Limited	305943	0.0%
ENI UKCS Limited	1019748	0.0%
Neptune E&P UKCS Limited	3386464	0.0%
RockRose UKCS12 Limited	981126	0.0%
Repsol Sinopec Resources UK Limited	825828	0.0%
Repsol Sinopec LNS Limited	2483161	0.0%

1.5 Summary of Proposed Decommissioning Programme

The selected decommissioning option for Brae Alpha West Drilling Rig is shown in Table 1.3 below.

Table 1.3: Summary of Decommissioning Programme				
Proposed Decommissioning Solution Reason for Selection				
Brae Alpha West Drilling Rig will be cleaned of residual hydrocarbons, residual drilling fluids and chemicals, isolated from sources of power and removed to shore for recycling or appropriate disposal.	The proposed solution meets regulatory requirements and will facilitate the efficient P&A of the platform wells thereby contributing to the efficiency of the overall decommissioning programme.			

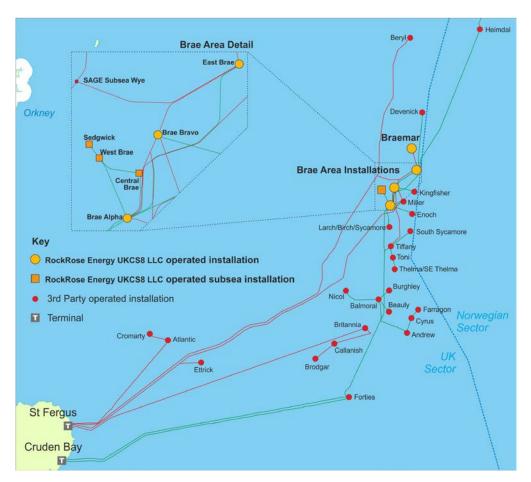
Interdependencies

West Drilling Rig is currently obstructing access to some of the well slots. RockRose UKCS8 LLC will therefore remove West Drilling Rig to provide access for the East Drilling Rig to all the platform well slots for plugging and abandonment.

1.6 Field Locations Including Field Layouts and Adjacent Facilities

The locations of the Brae Area facilities within the UKCS are shown in Figure 1.2

Figure 1.2: Brae Area Facilities Locations within UKCS





2 Description of Items to Be Decommissioned

2.1 Installation: Brae Alpha Platform West Drilling Rig

The Decommissioning Programme presented in this document covers Brae Alpha platform West Drilling Rig comprising Module 31, the derrick, Module 21, the sub-structure, and Module 11, the skidding module. Information regarding the Brae Alpha platform West Drilling Rig is presented in Table 2.1.

Table 2.1: Surface Facilities Information						
Installation	Area to be Decommissioned	Weight te	Location		Comments	
	West Drilling Rig will be decommissioned and removed from the platform		WGS84 Decimal	58.692799°N 1.281446°E	West Drilling Rig decommissioning expenditure will be ring fenced from	
Brae Alpha	to allow the East Drilling Rig access to all platform well slots for plugging and abandonment.	1090	WGS84 Decimal Minute	58° 41.568'N 1° 16.888'E	normal operational spending by setting up a specific project and associated budget for the work.	

2.2 Wells

There are no wells associated with the Decommissioning Programme described in this document.

2.3 Inventory Estimates

The initial estimate of the breakdown of materials in the Brae Alpha platform West Drilling Rig is presented in <u>Table 2.2</u>. A comprehensive determination of the inventories of materials will be conducted during the detailed engineering phase. The ultimate disposition of materials will follow the "reduce, reuse, recycle" hierarchy and appropriate material disposal procedures.

Summaries of the material inventories for West Drilling Rig are shown in Figure 2.1.

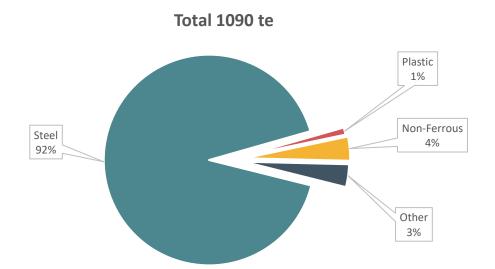
Table 2.2: Material Estimate Brae Alpha West Drilling Rig				
Material	Weight (te)	% of Total	Volume (m³)¹	
Steel	1000	91.7	125.0	
Concrete	0	0	0.0	
Plastic	12	1.1	6.2	
Non-Ferrous	40	3.7	4.7	
Hazardous ²	0.2	0.0	0.2	
Radioactive (NORM etc.) ²	0	0.0	0.0	
Other	38	3.5	38.2	
Total	1090	100		

¹ Volumes are subject to uncertainty as some classes of material, e.g. "plastics" have a wide range of density.

² Although it is not anticipated, there may be very limited amounts of Hazardous waste and NORM present, of the order of a few kilogrammes.



Figure 2.1: Estimated Inventory – Brae Alpha West Drilling Rig



3 Removal and Disposal Methods for Wastes

The West Drilling Rig will be removed from the platform by single lift, piece small, piece medium or a hybrid of these methods. The decommissioned West Drilling Rig will be taken to an appropriately licenced facility onshore for recycling or disposal.

Table 3.1: Waste Stream Management Methods				
Waste Stream	Removal and Disposal Method if Applicable			
Steel	Steel will be removed to an onshore dismantling facility and recycled.			
Concrete	N/A			
Plastic	Plastic will be removed to an onshore recycling facility and recycled or disposed of via appropriately licenced routes.			
Non-Ferrous	Non-ferrous metals will be removed to an onshore dismantling facility and recycled.			
Hazardous	Any hazardous waste that is present will be recycled or disposed of via appropriately licenced routes.			
Radioactive (NORM etc.)	Any radioactive waste that is present will be disposed of via appropriately licenced routes.			
Other	All other wastes will be recycled or disposed of via appropriately licenced routes.			



4 Environmental Appraisal Overview

The environmental sensitivities at Brae Alpha are summarised in <u>Table 4.1</u>. The impacts of the West Drilling Rig decommissioning operations on these environmental sensitivities and the proposed management measures are presented in <u>Table 4.2</u>.

Table 4.1: Environmental Sensitivities Summary				
Environmental Receptor	Main Features			
Conservation Interests	The Braemar Pockmarks Special Area of Conservation (SAC) is approximately 32km from Brae Alpha.			
	A Marine Life Study of the Brae Area infrastructure has not identified the presence of the cold water coral (<i>Lophelia</i> spp).			
Seabed	The seabed community in the Brae Area is classed as representative of the Central North Sea and is dominated by the bristle worm (<i>Paramphinone jeffreysii</i>), with other species such as <i>Spiophanes bombyx</i> , <i>Galthowenia oculata</i> , <i>Tharyx killariensis</i> and <i>Pholoe assimilies</i> also present.			
Fish	Several fish species are present in the Brae Area and use the area for spawning and/or nursery grounds; these include Norway pout, Nephrops, mackerel, haddock and blue whiting. The basking shark, tope, porbeagle, common skate and angel shark may also be present in low numbers.			
Fisheries	Commercial fishing in the Brae Area is dominated by demersal and shellfish fisheries, with fishing effort peaking during spring and autumn. Gear types used are trawlers and seine nets. Peterhead is the main landing port for the area.			
Marine Mammals	The seven most commonly sighted species of cetacean in the Brae Area are the harbour porpoise, Atlantic white-sided dolphin, white-beaked dolphin, Risso's dolphin, killer whale, minke whale and long-finned pilot whale. Grey and harbour seals have also been recorded.			
Birds	Seabirds are present in the central North Sea throughout the year, though densities in the Brae Area tend to be lower due to the distance from coastal colonies. Seabird densities in the Brae Area are at their lowest in late spring/early summer during the breeding season. After this, diversity and density of seabirds offshore increases. Seabirds are particularly vulnerable to surface pollutants during moulting (July) when the birds are flightless.			
Onshore Communities	Onshore communities are potentially sensitive to disturbance from cleaning, dismantling and disposal activities. RockRose UKCS8 LLC will select onshore decommissioning facilities that comply with all regulatory requirements to ensure that potential impacts are appropriately controlled.			
Other Users of the Sea	There are no ferry routes and no known military uses in the vicinity of the Brae Area. Recreation activity in the offshore North Sea is limited to the occasional yachts in passage. Telecommunications cables are charted to the north of the Brae platforms. No designated wreck sites or marine archaeological features are located within the area.			
Atmosphere	The primary source of atmospheric emissions will be from vessel activity during decommissioning activities.			

Table 4.2: Environmental Appraisal		
Activity	Main Impact	Management
Brae Alpha West Drilling Rig Removal	Energy and Emissions	West Drilling Rig removal is analogous to previous operational construction and maintenance activities and will be subject to similar controls to these operations.
		All vessels used for the decommissioning operations will comply with MARPOL 73/78 Annex VI on air pollution and machinery will be maintained in an efficient state.
	Underwater Noise	The removal of West Drilling Rig may involve short duration lift vessel operations at the platform, and will involve additional platform support vessel operations. These activities will be subject to the same controls as normal platform vessel operations.
		A noise assessment was undertaken for the removal of the complete Brae Alpha topsides, to identify the potential impacts of noise on marine mammals. The results are documented in the Environmental Statement [2].
	Accidental Events	The potential for spills, dropped objects or other contaminants to impact the ecosystem has been assessed. This is documented in the Environmental Statement [2]. The Brae Alpha and Oil OPEP (Oil Pollution Emergency Plan) will be revised to incorporate decommissioning activities if required. West Drilling Rig will be drained down of any residual liquids and cleaned to an appropriate level prior to any removal activities.



5 Interested Party Consultations

Marathon Oil UK LLC (now RockRose UKCS8 LLC) consulted a wide range of interested parties during the planning stages of the overall Brae Area decommissioning project. These parties included:

- OPRED Environmental Management Team
- OPRED Offshore Decommissioning Unit
- Greenpeace
- Health and Safety Executive
- Joint Nature Conservation Committee
- Marine Conservation Society
- Marine Scotland
- National Federation of Fishermen's Organisations
- Oil and Gas Authority
- OSPAR
- Scottish Environment Protection Authority
- Scottish Fishermen's Federation
- World Wide Fund for Nature (WWF)

Marathon Oil (now RockRose UKCS8 LLC) received no substantive comments relevant to the proposal to remove the Brae Alpha West Drilling Rig.

Marathon Oil (now RockRose UKCS8 LLC) also made information regarding decommissioning of the Brae Area available to other interested parties and the general public on their website which is now available via the RockRose UKCS8 LLC Brae Decommissioning website,

http://rockroseenergy.com/operations/decommissioning/

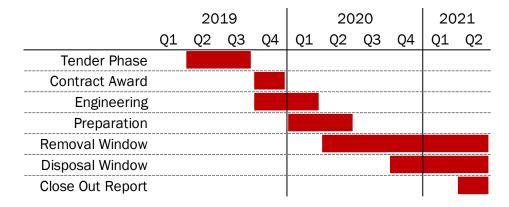
RockRose UKCS8 LLC does not propose to undertake any additional consultation in respect of Decommissioning the Brae Alpha West Drilling Rig described in this Decommissioning Programme.

6 Programme Management

6.1 Schedule

The Brae Alpha West Drilling Rig removal is scheduled for 2020. The removal and disposal activities may extend into 2021.

Figure 6.1: Brae Alpha West Drilling Rig Decommissioning Schedule



6.2 Costs

RockRose UKCS8 LLC has provided a cost estimate for decommissioning Brae Alpha Platform West Drilling Rig described in this Decommissioning Programme to OPRED and the OGA.



7 Partner Letters of Support



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

14th August 2019

Dear Sir or Madam

PETROLEUM ACT 1998 BRAE ALPHA WEST DRILLING RIG DECOMMISSIONING PROGRAMME

We acknowledge receipt of your letter dated 8th August 2019.

We, JX Nippon Exploration and Production (U.K.) Limited, confirm that we authorise Rockrose UKCS8 LLC to submit on our behalf abandonment programme relating to the decommissioning of the Brae Alpha West Drilling Rig facilities as directed by the Secretary of State on 8th August 2019.

We confirm that we support the proposals detailed in the Rockrose UKCS8 LLC Decommissioning Programme dated 14th August 2019, which is to be submitted by Rockrose UKCS8 LLC in so far as they relate to those facilities in respect of which we are required to submit an abandonment programme under section 29 of the Petroleum Act 1998.

Yours faithfully

Naoyoshi Kaneko

Director and General Manager

For and on behalf of JX Nippon Exploration and Production (U.K.) Limited

Tel: 020 8049 5100 Fax: 020 8049 5101 Email: noex@jx.noex.co.uk

Registered in England & Wales as Above. Reg. No. 3288689, VAT Reg. 539 3881 06



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Offshore Petroleum Regulator for Environment and Decommissioning

Department for Business, Energy & Industrial Strategy 3rd Floor, Wing C AB1 Building Crimon Place Aberdeen AB10 1BJ

14th August 2019

Dear Sir or Madam,

PETROLEUM ACT 1998 BRAE ALPHA WEST DRILLING RIG DECOMMISSIONING PROGRAMME

We acknowledge receipt of your letter dated 8th August 2019.

We, Spirit Energy Resources Limited confirm that we authorise Rockrose UKCS8 LLC to submit on our behalf abandonment programme relating to the decommissioning of the Brae Alpha West Drilling Rig facilities as directed by the Secretary of State on 8th August 2019.

We confirm that we support the proposals detailed in the Rockrose UKCS8 LLC Decommissioning Programme dated 14th August 2019, which is to be submitted by Rockrose UKCS8 LLC in so far as they relate to those facilities in respect of which we are required to submit an abandonment programme under section 29 of the Petroleum Act 1998.

Yours faithfully

Gerry Harrison Director

For and on behalf of Spirit Energy Resources Limited

Spirit Energy Resources Limited
Registered in England and Wales No.02855151
Trading Address: 5th Floor, iQ Building, 15 Justice Mill Lane, Aberdeen AB11 6EQ
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Department for Business, Energy & Industrial Strategy 3rd Floor, Wing C
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

28 August 2019

Dear Sir or Madam

PETROLEUM ACT 1998 BRAE ALPHA WEST DRILLING RIG DECOMMISSIONING PROGRAMME

We acknowledge receipt of your letter dated 8th August 2019.

We, TAQA Bratani Limited, confirm that we authorise Rockrose UKCS8 LLC to submit on our behalf an abandonment programme relating to the decommissioning of the Brae Alpha West Drilling Rig facilities as directed by the Secretary of State on 8th August 2019.

We confirm that we support the proposals detailed in the Rockrose UKCS8 LLC Decommissioning Programme dated 14th August 2019, which is to be submitted by Rockrose UKCS8 LLC in so far as they relate to those facilities in respect of which we are required to submit an abandonment programme under section 29 of the Petroleum Act 1998.

Yours faithfully

Sandy Hutchison

Legal, Commercial and Business Services Director

For and on behalf of TAQA Bratani Limited



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28 August 2019

Dear Sir or Madam

PETROLEUM ACT 1998 BRAE ALPHA WEST DRILLING RIG DECOMMISSIONING PROGRAMME

We acknowledge receipt of your letter dated 8th August 2019.

We, TAQA Bratani LNS Limited, confirm that we authorise Rockrose UKCS8 LLC to submit on our behalf an abandonment programme relating to the decommissioning of the Brae Alpha West Drilling Rig facilities as directed by the Secretary of State on 8th August 2019.

We confirm that we support the proposals detailed in the Rockrose UKCS8 LLC Decommissioning Programme dated 14th August 2019, which is to be submitted by Rockrose UKCS8 LLC in so far as they relate to those facilities in respect of which we are required to submit an abandonment programme under section 29 of the Petroleum Act 1998.

Yours faithfully

Sandy Hutchison

Legal, Commercial and Business Services Director For and on behalf of TAQA Bratani LNS Limited

Registered in England and Wales No 05975475 Registered office Cannon Place, 78 Cannon Street, London EC4N 6AF VAT no 918558291



8 Supporting Documents

- [1] Brae Alpha, Brae Bravo, Central Brae, West Brae and Sedgwick Combined Decommissioning Programmes, 9000-RRE-99-PM-RP-00003-000.
- [2] Brae Alpha, Brae Bravo, Central Brae, West Brae and Sedgwick Combined
 Decommissioning Programmes Environmental Statement, 9000-RRE-99-EV-RT-00001000.



9020-RRE-99-DR-RP-00002-000 Revision I03

http://rockroseenergy.com/operations/decommissioning/