OTTER SUBSEA INSTALLATION REMOVAL OF ROOF HATCHES FROM THE OTTER TEMPLATE AND WATER **INJECTION WELLHEAD PROTECTION STRUCTURES DECOMMISSIONING PROGRAMME**





DOCUMENT CONTROL

Approvals

	Name	Date
Prepared by	Louisa Dunn Decommissioning Stakeholder & Compliance Lead Duncan Talbert Decommissioning Consultant Sonia Daniel Xodus Group	September 2024
Reviewed by Chris Wicks NNS Decommissioning Programme Manager		September 2024
Approved by	David Wilson Decommissioning Director	September 2024

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Robert Willison	OPRED ODU



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TABLE OF ABBREVIATIONS

Abbreviation	Explanation
AWMP	Active Waste Management Plan
CA	Comparative Assessment
CO ₂	Carbon dioxide
CO _{2e}	Carbon dioxide equivalent
CoP	Cessation of Production
DP	Decommissioning Programme
DSV	Dive Support Vessel
EIA	Environmental Impact Assessment
km	Kilometres
km ²	Square kilometres
m	metres
m ²	Square metres
m ³	Cubic metres
m/s	Metres per second
NMPi	National Marine Plan interactive
NNS	Northern North Sea
NORM	Naturally Occurring Radioactive Material
NSTA	North Sea Transition Authority
ODU	Offshore Decommissioning Unit
OEUK	Offshore Energies UK
OPEX	Operational Expenditure
OPRED	Offshore Petroleum Regulator for Environment and Decommissioning
OSPAR	Oslo and Paris Conventions
P&A	Plug and Abandon
PMF	Priority Marine Feature
SAC	Special Area of Conservation
SONAR	Sound Navigation and Ranging
TAQA	TAQA Bratani Limited
Те	Tonnes
UK	United Kingdom
UKCS	United Kingdom Continental Shelf
UKHO	United Kingdom Hydrographic Office
WBS	Work Breakdown Structure



1 Executive Summary

1.1 Decommissioning Programme

This document contains a single Decommissioning Programme (DP) for notices under Section 29 of the Petroleum Act 1998 covering the removal of roof hatches from the Otter template protection structure and the Otter water injection wellhead protection structure.

The activities covered under this programme comprise removal of 9 protection structure hatches, 7 from the template protection structure and 2 from the water injection wellhead protection structure (Figure 1-4, Figure 1-5 and Figure 1-6) to provide access to facilitate pipeline disconnection and to enable plugging and abandonment of the wells located beneath the Otter template protection structure (wells P1, P2, P3, & I1), and water injection wellhead protection structure (well I2).

The remaining Otter field infrastructure, which is listed on the Section 29 Notices, will be subject to a separate future DP. The removal of the items identified within the current DP will be performed so that it does not preclude any future decommissioning work in the field.

1.2 Requirement for Decommissioning Programme

1.2.1 Installation:

In accordance with the Petroleum Act 1998, as amended, TAQA, as operator of the Otter subsea field, and on behalf of the Section 29 Notice Holders (see Table 1-2), is applying to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) to obtain approval for decommissioning the Otter subsea installations, specifically the Otter protection structures' hatches, as detailed in Section 2.1 of this document. (See also Section 8 – Section 29 Holders' Letters of Support).

Following stakeholder and regulatory consultation the Decommissioning Programme is submitted in compliance with national and international regulations, and OPRED guidance [1].

The estimated schedule outlined for the decommissioning project spans a 3 month period, commencing in July 2024.

1.3 Introduction

The Otter Field infrastructure is located in UKCS Blocks 210/15a, 210/20d and 211/16, 120 km to the north-east of the Shetland Islands, in a water depth of approximately 182 m. The field was produced via the North Cormorant Platform, which is located in UKCS Block 211/21a approximately 32.5km to the south southeast of the Otter field and onwards through the Brent Pipeline System to the Sullom Voe Terminal in Shetland.

The Otter protection structures lie approximately 21km north of the Eider platform in the Northern North Sea in UKCS Block 210/15a. The structures protect the Otter wells and manifold skid from fishing gear impacts and dropped objects. The template protection structure is not directly connected to the template or its supports, and the water injection wellhead protection structure is not directly connected to the wellhead.

The top of the template protection structure consists of seven hatches for individual access to the four well slots and the manifold located on the Otter template. With the exception of the central hatch, the



hatches are hinged on the port and starboard top chord members and supported on the centre hatch. The centre hatch gives access to the manifold and is hinged on a beam supported by the top chord members. The centre hatch can only be opened if all other hatches are already open. The top of the water injection wellhead protection structure consists of two hatches, hinged on the starboard top chord, and supported on the opposite port chord.

1.3.1 Reason for Decommissioning

Otter ceased production in early June 2024, followed by pipeline flushing and subsea disconnection and ultimately Plugging and Abandonment (P&A) of the wells.

Hatch removal is required to facilitate pipeline disconnection work and to provide equipment access for P & A of the Otter wells. Hatch opening and removal is an involved operation that requires the use of divers. It is preferable in terms of operational efficiency, use of resources, and minimising risk to divers, to remove the hatches during the first mobilisation to Otter.

Following stakeholder and regulatory consultation, the Decommissioning Programme is submitted without derogation and in full compliance with OPRED Guidance [1].

1.4 Overview of Facilities Being Decommissioned

1.4.1 Installations

Table 1-1: Installations Being Decommissioned					
Field(s)	Otter	Production Type	Oil		
Water Depth	182 m	UKCS Block	210/15a, 210/20d, 210/20c, 211/16a, 211/16b		
Distance to Median	38 km	Distance to UK Coastline	118 km		
Otter Protec	tion Structures Hatch Types				
Number	Туре		Total Weight in Air (Te)		
2	Template Protection Structure Hatch Type 1A (wells I1, P3)		7.2 (3.6 Te each)		
2	Template Protection Structure Hatch Type 1M (wells P1, P2)		7.2 (3.6 Te each)		
2	Template Protection Structure Hatch Type 2 (P&S)		4.2 (2.1 Te each)		
1	Template Protection Structure Hatch Type 3 (centre)		8.1		
2	Water Injection Wellhead Protection Structure Hatches (I2)		7.2 (3.6 Te each)		



Table 1-2: Installation Section 29 Notice Holders						
Company	Registration Number	Equity Interest (%) Unit Area				
TAQA Bratani Limited	05975475	80.996%				
TAQA Bratani LNS Limited	06230540	19.004%				
Dana Petroleum (BVUK) Limited	03337437	0				
Fina Exploration Limited	00808167	0				
Fina Petroleum Development Limited	00740632	0				

1.5 Summary of Proposed Decommissioning Programme

The selected decommissioning option for the Otter protection structures' hatches is shown in Table 1-3 below.

Table 1-3: Summary of Decommissioning Programme					
Proposed Decommissioning Solution Reason For Selection					
Otter Protection Structures' Hatches					
Full Removal: All recovered materials, i.e. hatches, will be transported to shore for re-use, recycling, or disposal. To facilitate pipeline disconnection, to enable P&A of Otter wells, and in compliance with OSPAR Decision 98/3 and regulatory requirements.					
Drill Cuttings					
There are no drill cuttings in the scope of this decommissioning programme.					
Interdependencies					

The scope of this decommissioning programme is limited to Otter protection structures' hatches removal and recovery. This is required to facilitate pipeline disconnection and to enable P&A of the Otter wells

The other components of the Otter subsea installation will be the subjects of a separate decommissioning programme.



1.6 Field Locations Including Field Layouts and Adjacent Facilities

The location of the Otter field within the UKCS is shown in Figure 1-1. The facilities adjacent to Otter are shown in Figure 1-2 and listed in Table 1-4. Figure 1-3 shows the Otter facilities layout and Figure 1-4, Figure 1-5 and Figure 1-6 show the template protection structure and water injection wellhead protection structure and hatches in more detail.

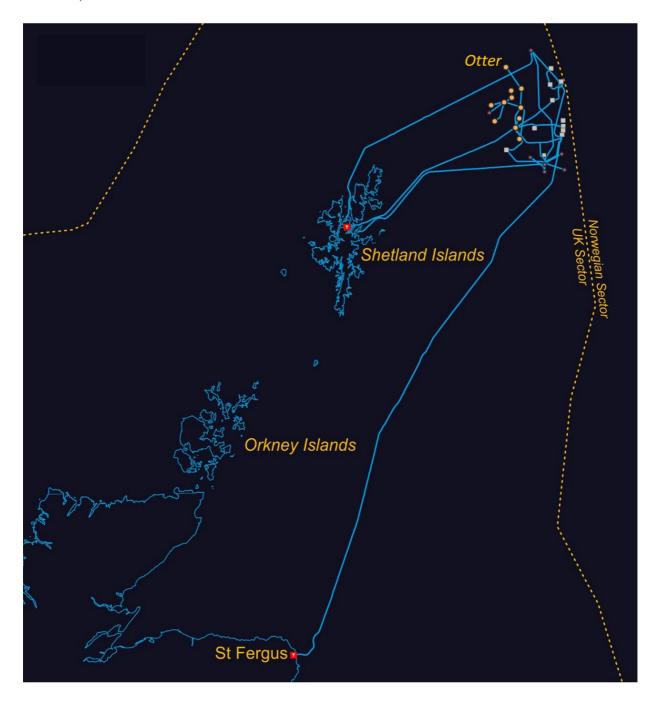


Figure 1-1: Otter Field Location within the UKCS





Figure 1-2: Otter Adjacent Facilities Layout



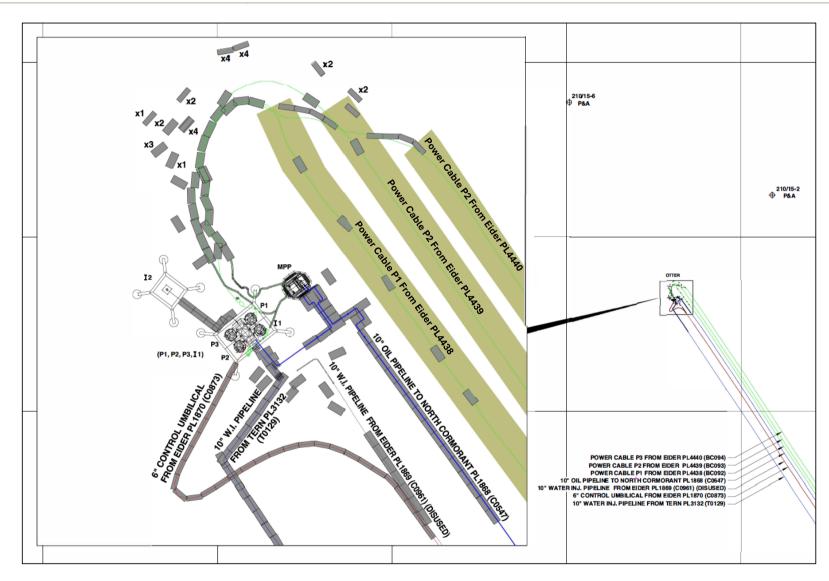


Figure 1-3: Otter Facilities Layout



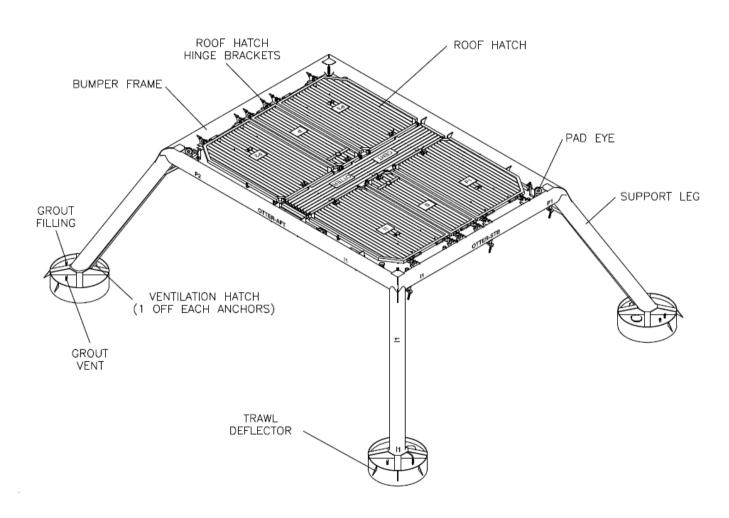


Figure 1-4: Overview of Otter Template Protection Structure



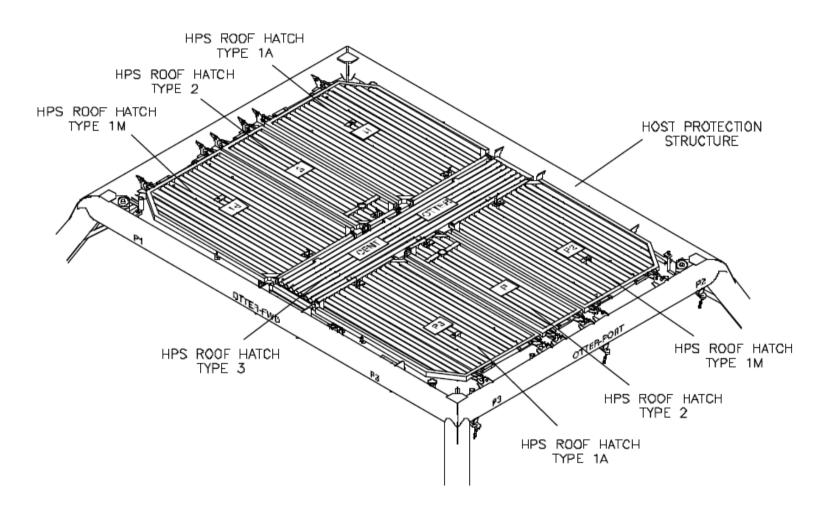


Figure 1-5: Otter Template Protection Structure Hatch Types



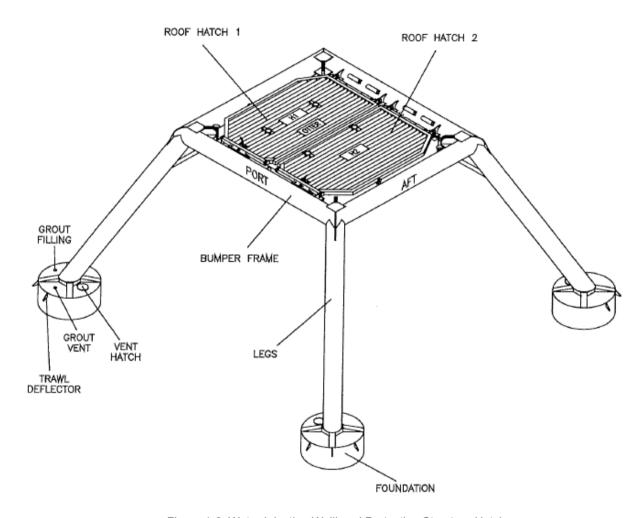


Figure 1-6: Water Injection Wellhead Protection Structure Hatches



Table 1-4: Ad	djacent Facilitie	es			
Operator	Name	Туре	Distance/ Direction from Otter	Information	Status
TAQA Bratani	Eider	Platform	21 km Southeast	Oil and Gas Development	Non-Operational
TAQA Bratani	Tern	Platform	26.9 km South	Oil and Gas Development	Non-Operational
TAQA Bratani	North Cormorant	Platform	32.5 km South- southeast	Oil and Gas Development	Operational
EnQuest Heather	Magnus PL1762	Pipeline crossing	6.9 km Southeast	Otter pipelines crossing over	Operational Pipeline

Impacts of Decommissioning Proposals

TAQA has been, and will continue to be, in contact with operators and owners of adjacent facilities. There are no known interactions between the adjacent facilities and the proposed decommissioning programme. The removal of the Otter protection structures' hatches is to facilitate the disconnection, and P&A of the Otter wells (P1, P2, P3, I1, and I2). The removal of the hatches will be managed as part of the execution of Otter Field decommissioning. The removal of the hatches will be performed in a way that does not prejudice any further decommissioning work in the field.

Any activities associated with decommissioning the wider Otter subsea field installations and pipelines will be dealt with within a separate DP.

1.7 Industrial Implications

TAQA is developing the decommissioning contract and procurement strategy for this work, on behalf of the Section 29 Notice Holders. TAQA envisages that this strategy may include using incumbent contractors for recurring items / services covered by Master Services Agreements held by TAQA.

Notwithstanding, TAQA has, and will continue to

- Publish Otter decommissioning project information, including the project schedule, on the TAQA decommissioning <u>website</u>.
- Publish project information and contact details on the NSTA Pathfinder website.
- Engage with the NSTA and the decommissioning supply chain on any relevant issues relating to the Otter decommissioning programme and schedule.
- Where appropriate use the First Point Assessment Limited (FPAL) / SEQual databases as the sources for establishing tender lists for supply chain items.



2 Description of Items to be Decommissioned.

2.1 Subsea Installations

Key information regarding the Otter protection structures' hatches is presented in Table 2-1.

Table 2-1:	Subsea Ins	stallations				
Item	Number	Size (m) [LxWxH]	Weight in Air (Te)		Location	Comments / Status
Template P	rotection Stru	cture Hatches				
Hatch Type 1A (I1, P3)	2	8.0 x 5.1 x 0.3	7.2	WGS84	61.5141° N	Hatches for wells I1 & P3
Hatch Type 1M (P1, P2)	2	8.0 x 5.1 x 0.3	7.2	Decimal	00.9496° E	Hatches for wells P1 & P2
Hatch Type 2 (P&S)	2	8.0 x 2.1 x 0.5	4.2	WGS84 Decimal	61°30'50.56" N	Port & Starboard Hatches
Hatch Type 3 (centre)	1	4.2 x 12.3 x 0.9	8.1	Minute	00°56'57.77" E	Centre Hatch for Otter manifold skid
Water Injection Wellhead Protection Structure Hatches						
W.I. wellhead				WGS84 Decimal	61.5142" N 00.9489" E	
protection structure hatch	2	4.5 x 8 x 0.5	7.2	WGS84 Decimal Minute	61°30'51.15" N 00°56'56.11" E	W.I. wellhead Hatches

2.2 Drill Cuttings Piles

There are no drill cuttings piles associated with the Otter protection structures' hatches.



2.3 Inventory Estimates

An estimate of the material inventories for Otter protection structures' hatches is presented in Table 2-2 and in Figure 2-1.

Table 2-2: Otter Subsea Installations (Protection Structures' Hatches) Inventory					
Material	Weight (Te)	% of Total			
Ferrous metals (all grades)	33.6	> 98			
Non-ferrous metals (aluminium alloys)	0.3	< 1			
Concrete	0	0			
Hazardous – including NORM and residual fluids	0	0			
Other Non-Hazardous – Marine Growth	0.3	< 1			
Total	34.2	100			

Total Weight ≈ 34 Tonne

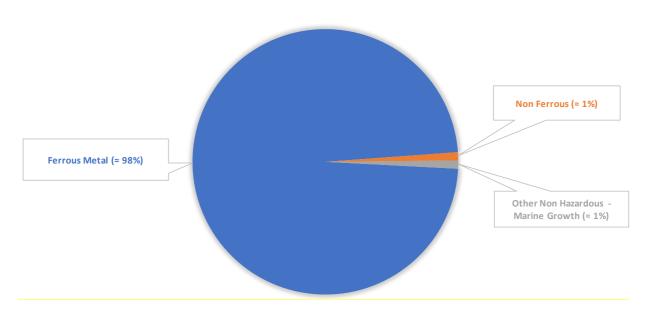


Figure 2-1: Subsea Installations Inventory



3 Removal and Disposal Methods

Recovered material will be landed onshore in 2024. TAQA will ensure the principles of the waste hierarchy will be met in the handling the Otter protection structures' hatches to maximize reuse and recycling of materials.

TAQA has an Active Waste Management Plan in place for the 2024 NNS Subsea Disconnections and Otter structures' hatches removal projects. The AWMP identifies and quantifies the waste materials resulting from the decommissioning activities defined in this DP and the available disposal options. The AWMP details the disposal route for the hatches and their constituent materials.

The hatches will be returned to shore for dismantling and sorting before being transferred to suitably licenced waste facilities. Materials management options will take account of the waste hierarchy. Since avoidance and reduction of waste are not relevant to the Otter protection structures' hatches, it is the intent that, where possible, materials and equipment will be re-used or recycled.

The recovered Otter hatches will be processed by Augean, TAQA's operational waste management contractor. Augean is proposing to use John Lawrie Metals to process scrap metals. Notwithstanding, suitable competent, licenced, waste facilities will be used to process the waste arising from Otter hatch removal.

3.1 Subsea Installations and Stabilisation Features

The options considered for the disposal of the Otter protection structures' hatches, and the selected disposal route are listed in Table 3-1.

Table 3-1: Subsea Installations and Stabilisation Features				
Installation / Feature	No.	Option	Disposal Route	
Hatches	9	Full recovery	Return to shore for reuse or recycling or other waste treatment as appropriate.	



3.2 Waste Streams

Table 3-2: Materials and Waste Streams				
Materials	Removal and Disposal Method			
Bulk Liquids	N/A			
Marine Growth	Some marine growth on the Otter protection structures' hatches may be removed offshore during removal and recovery. As part of infrastructure disposal operations remaining marine growth will be removed and disposed of in accordance with guidelines.			
NORM	N/A			
Asbestos	N/A			
Other Hazardous Materials	N/A			
Onshore Dismantling Sites	The recovered hatches will be managed by TAQA's incumbent waste contractor, Augean. Augean and the associated subcontractors will use appropriately licenced dismantling, treatment, recycling, and disposal sites. The Active Waste Management Plan will follow the "reduce, reuse, recycle" paradigm. Since avoidance and reduction of waste are not relevant to the Otter protection structures' hatches, it is the intent that, where possible, materials will be re-used or recycled.			

Table 3-3: Inventory Di	isposition		
	Total Inventory Tonnage (Te)	Planned Tonnage to Shore (Te)	Planned Tonnage Left in Situ (Te)
Subsea Installations	33.9	33.9	0

Total inventory weights noted are approximate and include all the Otter protection structures' hatches. It is TAQA's intention to maximise re-use or recycling of recovered inventory.



4 Environmental Appraisal Overview

4.1 Environmental Sensitivities

The environmental sensitivities in the vicinity of the Otter template protection structure and water injection wellhead protection structure are summarised in Table 4-1 The impacts of decommissioning operations on these sensitivities are listed in Table 4-2.

Table 4-1: Environmental Sensitivities

Receptor

Main Feature

There are no Nature Conservation Marine Protected areas (NCMPAs), Special Areas of Conservation (SACs) or Special Protection areas (SPAs) within 40 km of the Otter template protection structure and water injection wellhead protection structure. The closest protected site is the Pobie Bank Reef SAC, approximately 96 km west of the structures.

With regards to free-swimming species, ling, anglerfish, and cod were observed within the Otter decommissioning area. Ling, anglerfish, and cod are Priority Marine Feature (PMF) species. Additionally, cod is an OSPAR listed threatened and/or declining species.

Numerous small and large seabed depressions were identified during the Benthic Solutions [3] Otter Field surveys, which may be classified as 'Submarine structures made by leaking gases' (Annex I Habitat). The lack of Methane-Derived Authigenic Carbonate (MDAC) present in pockmarks identified indicates that Annex I 'Submarine structures caused by leaking gases' is not present [3].

Conservation Interests

Ocean quahog are listed on the OSPAR list of threatened and/or declining species and habitats and are designated as a PMF. No Ocean quahogs were observed in the vicinity of the structures [3][4]. According to the PMF distribution maps provided in Tyler-Walters et al [5] the seabed in UKCS Block 210/15 is within a wider area of 'subtidal sand and gravels'. 'Subtidal sands and gravels' also support internationally important commercial fisheries e.g., scallops, flatfish, sandeels, and are important nursery grounds for juvenile commercial fish species such as sandeels, flatfish, bass, skates, rays, and sharks [3]. However, the distribution of this feature is relatively wide in the North Sea [6].

The habitat 'Seapen and burrowing megafauna communities' is also on the OSPAR list of threatened and/or declining habitats and species and is a PMF. Seapen burrows are present across the immediate area at low densities. Frequent burrow density, considered as the OSPAR 'Seapen and Burrowing Megafauna Communities' habitat was identified at a sampling station approximately 10 km southeast of the Otter manifold [3][4].



Table 4-1: Environmental Sensitivities

Receptor

Main Feature

The water depth across the Otter Field ranges from 180.7-191.8 m below Lowest Astronomical Tide (LAT). The seabed deepens very gently towards the northwest with a gradient of <12° throughout.

To the south of the structures, the mean wave height ranges from 2.11 - 2.40 m whilst in the north it ranges from 2.41 - 3.30 m and wave energy is classified as "low". The direction of residual water movement in this area is generally to the south or east and the mean residual current through the decommissioning area is approximately 0.05 to 0.1 m/s.

The physical seabed characteristics recorded from survey work show a high degree of uniformity across area surrounding the Otter template and satellite water injection well. Sediments in the vicinity of the Otter template and satellite water injection well comprise silty, shelly sand with occasional pebbles and cobbles. Numerous small and a few large yet shallow (<1 m deep) depressions were visible across the wider area.

Seabed

Under the European Nature Information System (EUNIS) habitat classification, the most widespread seabed type around the Otter template and satellite water injection well is predicted to be MD52 "Atlantic offshore circalittoral sand" with areas of MD62 "Atlantic offshore circalittoral mud" and MD32: Atlantic offshore circalittoral coarse sediment. This habitat type falls within the broad PMF habitat "offshore sands and gravels".

Visible fauna was mostly sparse in areas predominantly characterised by sand but increased in areas around boulders with visible fauna including Crustacea (hermit crabs and squat lobsters), Echinoderms (urchin and starfish), Cnidaria (anemones), Porifera and Bryozoa [3][4].

There are no drill cuttings piles associated with the Otter template protection structure and water injection wellhead protection structure. Hydrocarbon analyses of sediments from the Otter template and satellite water injection well area revealed concentrations largely representative of fine sandy sediments of the NNS. The recorded Total Hydrocarbon Concentration (THC) also fell below 50µg g-1 value, that represents the threshold above which hydrocarbons are expected to have a "significant environmental impact" [3][4].

Fish

Shipping

The Otter template protection structure and water injection wellhead protection structure are located within spawning grounds for haddock, Norway pout, saith and whiting. All species have a low or undetermined spawning intensity.

The area also is a potential nursery ground for anglerfish, blue whiting, European hake, herring, ling, mackerel, spurdog, whiting and Norway pout. Blue whiting is the only species with a high intensity nursery ground in the area while other species have a lower nursery intensity.

Fisheries and

The Otter template and satellite water injection well are located in International Council for the Exploration of the Sea (ICES) rectangle 52F0. This region is primarily targeted for demersal species, with a negligible contribution from shell fisheries. Fishing effort is dominated by trawl fishing gears. Even with the hatches removed, the Otter Xmas trees and wellheads still have the same degree of protection as the other TAQA NNS subsea wells, including the presence of the 500 m safety zone. Additionally, the downhole safety valves on the Otter wells are closed and tested, therefore in the unlikely event that the Xmas trees or wellheads suffered damage, hydrocarbon release from these wells is extremely improbable. Annual fishery landings by weight and value are considered low for demersal and pelagic fisheries in comparison to other areas of the North Sea.

Shipping density in this area of the North Sea is "very low" or "low", with a localised increase in vessel activity due to the presence of offshore oil and gas operational and maintenance vessels.

The decommissioning activity will also be taking place within an existing 500m safety exclusion zone where vessels other than oil and gas vessels are not permitted. Any impact on fishing or shipping is therefore discounted.

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Table 4-1: Env	vironmental Sensitivities
Receptor	Main Feature
Marine Mammals	Harbour porpoise, Atlantic white-sided dolphin, minke whale and beaked whale are the most abundant species recorded in UKCS Block 210/15 around the Otter template and satellite water injection well. The harbour porpoise is by far the most frequently recorded cetacean, which is reflective of these being the most abundant and widely distributed cetaceans in the North Sea.
Wallings	Both grey and harbour seal densities are known to be low in UKCS Block 210/15. The average number of both grey and harbour seals in the vicinity of the area is predicted to be low, between $0-1 \text{ per } 25 \text{ km}^2$.
	In the Northern North Sea (NNS) the most numerous species present are likely to be northern fulmar, black-legged kittiwake, and common guillemot.
Birds	UKCS Block 210/15 is located within or in the vicinity of a wider area of aggregation for northern fulmar, northern gannet, European storm petrel, Arctic skua, great skua, black-legged kittiwake, herring gull, Arctic tern, guillemot, razorbill, and Atlantic puffin during their breeding season.
	Overall, seabird sensitivity to oil pollution in the region of the Otter subsea structures is considered low (score of 5) throughout most of the year except for winter months. The Seabird Oil Sensitivity Index (SOSI) value is medium (score of 4) for November through to February inclusive in Block 210/15.
Onshore Communities	Waste generated during decommissioning will be brought to shore and will be managed in line with TAQA's Waste Management Strategy and the Waste Hierarchy, as part of the project Active Waste Management Plan, using approved waste contractors and in liaison with the relevant Regulators. Preventing waste is ultimately the best option, achieved through reducing consumption and using resources more efficiently. However, this is followed by re-use and recycling of goods. If all re-use opportunities have been taken by TAQA, the next preferable option is for recycling of materials.
	Block 210/15 is not a Block of interest to the Ministry of Defence (MoD) [7]. There are no planned or operating telecommunication cables in close vicinity (< 40 km) of the Otter template and satellite water injection well. The nearest telecom cable is the Cantat 3 Faroese, located 77 km east northeast of the structures [8].
Other Users of the sea	There are no 'non-dangerous wrecks' within close vicinity of the structures, as identified by the UK Hydrographic Office (UKHO). There are four non-dangerous wrecks located between 30 and 40 km from the Otter template and satellite water injection well [9].
	There are no planned or operating renewable energy sites in close vicinity (<40 km) of the Otter Field. The closest renewable energy site is Tidal farm, Bluemull Sound, located 137 km west southwest from Otter manifold.
Atmosphere	Emissions to the atmosphere will result from offshore vessel operations and onshore recycling of materials.



4.2 Potential Environmental Impacts and their Management

Environmental Impact Assessment (EIA) methods for the wider Otter Field have been used as a basis to consider the potential for significant environmental effects as a result of the specific decommissioning activities described within this DP. The appraisal only identifies potential environmental impacts from the decommissioning activities to be:

- Seabed disturbance impacts
- Atmospheric impacts

Table 4-2 details the potential environmental impacts and the management and mitigation measures that will be put in place to reduce the potential for environmental effects.



Activity	Main impacts	Impact quantification and context	EIA Rationale	Management
Removal of hatches on Otter Protection Structures	Seabed disturbance impacts from removal of subsea installations and potential temporary wet storage*	Dimensions of Otter Template Protection Structure Hatches: 13 m x 19 m Direct impact = 247 m ² Indirect impact = 494 m ² Dimensions of Otter Water Injection Wellhead Protection Structure	Decommissioning disturbance may cause mortality, due to injuries arising from the crushing of benthic and epibenthic fauna which are sedentary or unable to move quickly. Mobile fauna and sediment burrows may also be disturbed.	 In the first instance, the hatches will be laid on existing mattresses, thereby avoiding any seabed disturbance. Activity will be undertaken within the existing 500 m safety exclusion zone.
	Note that as a primary removal approach, the hatches will be placed on existing mattresses in the first instance and therefore seabed disturbance may be a non-issue.	Hatches: 10 m x 9 m Direct impact = 90 m² Indirect impact = 180 m² Total direct impact: 337 m² Total indirect impact: 674 m² Overall Footprint: 1,011 m² *Note that the footprint incorporates the dimensions of the hatches where they may be placed directly on the seabed and any indirect impact from sediment mobilisation. As a conservative estimate, the area of indirect disturbance has been assumed to be double the area of direct disturbance. This represents an absolute worst-case scenario given that the hatches will most likely be placed temporarily on existing mattresses.	In terms of protected species and habitats, ocean quahogs and 'Submarine structures caused by leaking gases' were not identified in the vicinity of the Otter subsea structures. Seapens may be found sporadically throughout the wider area (Approximately 10 km away [3]). Given the small scale and temporary nature of the impact and the extent of seapen habitat across the North Sea the recovery of seapens and burrowing megafauna would be swift. Overall, based on the extremely localised and temporary nature of the disturbance, the proposed decommissioning activities will have an impact of negligible consequence (i.e. not significant) for seabed receptors.	 Vessels undertaking the decommissioning works would be dynamically positioned vessels with no direct interaction between vessel and seabed. All activities which may lead to seabed disturbance will be planned, managed, and implemented in such a way that disturbance is minimised. Activities will be risk assessed and permitted under a Marine Licence. Clear seabed verification following wider Otter Field decommissioning activity will ensure there is no residual risk to other sea users. Non-intrusive verification techniques will be considered in the first instance and in agreement with OPRED and fishing bodies.



Activity	Main impacts	Impact quantification and context	EIA Rationale	Management
Vessel	Carbon Dioxide	Vessel activity 3 days DSV:		Vessel management.
activity and removal to	equivalent (CO ₂ e) atmospheric	196 Te CO ₂ e	Decommissioning emissions are inevitable but direct project emissions	 Minimal vessel use/ movement.
shore	emissions: Vessel activity 3	Recycling of 33.6 Te steel: 55 Te CO₂e	are considered to be of a minor magnitude, low consequence and therefore not significant in the context	 Vessel sharing where possible.
	days Dive Support		of EIA.	Engine maintenance.
Vessel (DSV): Total CO2e emissions: 196 Te CO ₂ e TAQA does however acknowled	TAQA does however acknowledge the potential contribution of	 The Otter structures' hatches will be removed as part of a wider programme of work. 		
	Recycling of 34 Te steel: 55 Te CO ₂ e	The cumulative emissions generated by the activities associated with the decommissioning of the Otter hatches are small relative to life-time. greenhouse gas (GHG) emissions to climate change. As far as is reasonable TAQA will minimise emissions from decommissioning	This negates the requiremen to mobilise a Dive Support Vessel to remove the hatches	
	Total CO2e emissions: 251 Te CO₂e	production. Estimated $CO_{2}e$ emissions are 251 Te, equating to approximately 0.001% of total UKCS emissions (OEUK, 2023).	operations in line with Net Zero targets, and regulatory attainment targets. TAQA will work with the supply chain and joint ventures as part of meeting these commitments.	prior to well P&A, thereby reducing overall vessel activi and consequent impacts.

The EIA process did not identify any significant residual environmental impacts and it is anticipated that any physical, biological, or socio-economic impact during the decommissioning activities will be negligible and very short term.



5 Interested Party Consultations

TAQA consulted a wide range of interested parties during the planning and preparation stages of the Northern North Sea Fields subsea Comparative Assessment (CA) process [2]. This CA included the Otter template protection structure and satellite water injection wellhead protection structure.

The consultees included:

- Scottish Fishermen's Federation (SFF)
- Health and Safety Executive (HSE)
- Joint Nature Conservation Committee (JNCC)
- North Sea Transition Authority (NSTA)
- Scottish Environment Protection Agency (SEPA)
- TAQA International BV
- Shell
- OPRED Offshore Decommissioning Unit (ODU)(Observer)

Workshops and individual consultations with stakeholders were held to describe the CA process, to invite feedback and to understand stakeholders' particular interests regarding the impacts of decommissioning. Following this a CA report [2] was published documenting the findings from the CA process.

Given that the Otter protection structures' hatches covered by this DP form part of Otter subsea infrastructure, the recommendation from the CA [2] pertaining to subsea structures (full removal) has been applied.

This draft DP was circulated to stakeholders for consultation.

Table 5-1 presents the comments received from stakeholders, and TAQA's response to each comment.



Table 5-1: Summary of Sta	keholder Comments	
	Statutory Consultees	
Stakeholder	Stakeholder Comment	TAQA Response
Global Marine Systems Limited (GMS)	There are no active telecom cables in the vicinity (closest is >75km away) no further comments.	Noted
National Federation of Fishermen's Organisations (NFFO)	No comments received	Noted
Northern Irish Fish Producers' Organisation (NIFPO)	No comments received	Noted
North Sea Transition Authority (NSTA)	Response received from OPRED on NSTA's behalf.	Noted
	In line with our statutory consultee remit outlined in section 29(2A) of the Petroleum Act 1998, the NSTA can advise the following: • Adequate engagement via the NSTA's Stewardship engagement process, including in November 2023. • Any reuse/repurposing opportunity for the Otter infrastructure would be linked to a wider Eider area initiative. The NSTA expects TAQA to engage OPRED and the NSTA, collectively, on the wider subsea decommissioning opportunities. • The NSTA does not have benchmark data for subsea infrastructure decommissioning. However, the magnitude of estimated spend detailed for this DP is commensurate with the scope, based upon estimates and outturn costs of scopes of similar type and scale across industry of which the NSTA is aware.	



keholder Comments		
Statutory Cor	nsultees	
Stakeholder (Comment	TAQA Response
1. SFF's preferred desolution is total ren 2. In terms of TAQA's the verification of of Section 6.2, SFF in independent verification of the seabed will Innon-intrusive meth scan SONAR, in the or trawling within the Otter facilities a Given past experies abandoned wellhed gas field decommist the SFF would take to reaffirm that it hereservations regard survey data to verification survey data to verification survey decommist it is our view that the trawl verification survey decommist it is our view that the trawl verification survey decomposition of the decomposition is the best method.	ecommissioning noval. Is plan regarding clear seabed in lotes that an cation of the state be obtained by lods, e.g., sidence first instance, he area around as appropriate. In the area around lossioning works, ee the opportunity as serious ding the use of fy that an area is ivity to resume dissioning activity. He undertaking of weeps under lossioning work, of establishing	While it is not in the scope of the decommissioning programme described in this document, ultimately the Otter facilities will be completely removed as described in Section 6.2. TAQA notes SFF's view regarding clear seabed verification. TAQA will verify hatch removal by survey. Verification of clear seabed following complete removal of the Otter facilities will be addressed in a future DP for the balance of the Otter subsea facilities. This future DP will be subject to consultation with SFF and OPRED prior to decommissioning operations. The future DP will represent a further opportunity for consultation regarding clear seabed verification methodologies.
all	Stakeholder of Series preferred de solution is total rer. 2. In terms of TAQA's the verification of Section 6.2, SFF n independent verific of the seabed will non-intrusive meth scan SONAR, in the or trawling within the Otter facilities: Given past experie abandoned wellhe gas field decommit the SFF would tak to reaffirm that it he reservations regard survey data to veries afe for fishing act following decommit it is our view that the trawl verification so controlled condition replicated the fishing will be permitted in following the decomis the best method that it is safe for fisher safe for fisher safe for fisher will be permitted in following the decomis the best method that it is safe for fisher safe for	Stakeholder Comment 1. SFF's preferred decommissioning solution is total removal. 2. In terms of TAQA's plan regarding the verification of clear seabed in Section 6.2, SFF notes that an independent verification of the state of the seabed will be obtained by non-intrusive methods, e.g., sidescan SONAR, in the first instance, or trawling within the area around the Otter facilities as appropriate. Given past experiences of both abandoned wellhead and oil and gas field decommissioning works, the SFF would take the opportunity to reaffirm that it has serious reservations regarding the use of survey data to verify that an area is safe for fishing activity to resume following decommissioning activity. It is our view that the undertaking of trawl verification sweeps under controlled conditions, which replicated the fishing operations that will be permitted in the area following the decommissioning work, is the best method of establishing that it is safe for fishing to resume in



6 Programme Management

6.1 Project Management and Verification

TAQA, on behalf of the Section 29 Notice Holders, has appointed a project management team to manage the planning and execution of this decommissioning programme. The team will ensure that decommissioning is conducted in accordance with TAQA health, environmental and safety management principles, and relevant legislation. TAQA's management principles will govern operational controls, hazard identification and risk management. The work will be coordinated with due regard to interfaces with other operators' oil and gas assets and with other users of the sea.

TAQA will control and manage the progress of all permits, licences, authorisations, notices, consents, and consultations required. Any significant changes to the decommissioning programme will be discussed and agreed with OPRED.

6.2 Post-decommissioning Debris Clearance and Verification

This DP covers removal of the Otter protection structures' hatches. Upon completion, an as-left survey will be carried out. The other Otter structures and equipment will remain in place until final decommissioning. Until the remaining Otter structures are removed, the 500 m safety zone at Otter will remain in place.

Following the wider Otter subsea infrastructure decommissioning (subject to a separate future DP) TAQA will carry out post decommissioning debris surveys and seabed verification, centred around the sites of the Otter facilities. Any oilfield-related seabed debris that is found in this post decommissioning debris survey will be recovered and returned to shore for recycling or appropriate disposal.

Independent verification of the state of the seabed will be obtained by non-intrusive methods, e.g., side-scan SONAR, in the first instance, or trawling within the area around the Otter facilities as appropriate. Following verification, TAQA will issue a statement of clearance to all relevant governmental departments and non-governmental organisations.

The post-decommissioning survey results will be notified to the UK Fisheries Offshore Oil and Gas Legacy Trust Fund Ltd for inclusion in their FishSAFE system, and to the United Kingdom Hydrographic Office for notification and marking on Admiralty charts and notices to mariners.

6.3 Schedule

A proposed schedule for the decommissioning of Otter protection structures' hatches is provided in Figure 6-1 below. The commencement of any execution activities is subject to commercial agreements and contracts. This schedule envisages removal of the Otter protection structures' hatches during July, August, and September 2024.



	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	2025
Engineering								
Protection Structures Hatches Removal								
Protection Structures Hatches Disposal								***************************************
Site Survey								
Close Out Report Submission								

KEY:

Planned Activity Window

Note: Actual execution windows are subject to weather constraints, etc. and may change

Figure 6-1: Otter Protection Structures' Hatches Decommissioning Schedule

6.4 Costs

The decommissioning programme costs will be provided directly to OPRED in confidence.

Table 6-1: Provisional Decommissioning Costs	
Item	Estimated Cost (£m)
WBS 1 – Operator Project Management	
WBS 2 – Post CoP OPEX	
WBS 3 – Well Abandonment	
WBS 4 – Facilities & Pipelines Permanent Isolation & Cleaning	
WBS 5 – Topsides Preparation	
WBS 6 – Topsides Removal	Provided to OPRED in confidence
WBS 7 – Substructure Removal	Communico
WBS 8 – Onshore Recycling	
WBS 9 – Subsea Infrastructure	
WBS 10 – Site Remediation	
WBS 11 – Monitoring	

6.5 Close Out

A close out report will be submitted to OPRED and posted on the TAQA decommissioning website within twelve months of the completion of the scope within this decommissioning programme.



6.6 Post-Decommissioning Monitoring and Evaluations

This DP covers removal of the Otter protection structures' hatches. Post decommissioning surveys will be limited to as-left surveys of the immediate area around the Otter protection structures. These as left survey results will be included in the close out report.

Following the wider Otter subsea infrastructure decommissioning (subject to a separate future DP) TAQA will carry out a post-decommissioning environmental seabed survey, centred around the sites of the Otter facilities.

A copy of the survey results will be forwarded to OPRED. After the survey results have been sent to OPRED and reviewed, a post decommissioning monitoring regime will be agreed between TAQA and OPRED taking account of ongoing liability, the findings of previous surveys, and a risk-based approach to the frequency and scope of subsequent surveys.



7 Supporting Documents

- [1] Guidance Notes Decommissioning of Offshore Oil and Gas Installations and Pipelines November 2018, OPRED.
- [2] Comparative Assessment Northern North Sea Subsea Assets, Xodus Group, 77IFS-154925-L99-0006-02, Revision A01, December 2021.
- [3] Benthic Solutions, 2020. Otter to Eider Combined Environmental Baseline and Habitat Assessment Survey Report. Document number: 1932_O-E_EBS-HAS
- [4] Gardline 2012. UKCS 210/15a Otter Site Survey . March April 2012. Environmental Baseline Report. Gardline Report Ref 9022.1
- [5] Tyler-Walters, H., James, B., Carruthers, M. (eds.), Wilding, C., Durkin, O., Lacey, C., Philpott, E., Adams, L., Chaniotis, P.D., Wilkes, P.T.V., Seeley, R., Neilly, M., Dargie, J. & Crawford-Avis, O.T., 2016. Descriptions of Scottish Priority Marine Features (PMFs). Scottish Natural Heritage Commissioned Report No. 406. Available online at: https://www.nature.scot/doc/naturescot-commissioned-report-406-descriptions-scottish-priority-marine-features-pmfs [Accessed 01/08/2024].
- [6] National Marine Plan interactive (NMPi) 2024, Marine Scotland, https://marine.gov.scot/themes/fishing [Accessed 01/08/2024].
- [7] OGA (Oil and Gas Authority), 2019. Offshore Licensing Round information and resources. Available online at: https://www.nstauthority.co.uk/regulatory-information/licensing-and-consents/licensing/ [Accessed 01/08/2024].
- [8] KIS-ORCA, 2021 Subsea cable map. Available online at: https://kis-orca.org/
- [9] UKHO (2020). UK Hydrographic Office: Admiralty Maritime Data Solutions. Wrecks and Obstructions Data Service. Available online at: https://datahub.admiralty.co.uk/portal/apps/webappviewer/index.html?id=777d6d6b07fc4a80922b7e7880ff7152 [Account required]



8 Section 29 Holders' Letters of Support

Letters of Support will be obtained from the Section 29 Holders on final approval of the Decommissioning Programme, in advance of Cessation of Production (CoP) and full field decommissioning and will be provided within this section of the Programme.



Dana Petroleum (BVUK) Limited

King's Close 62 Huntly Street Aberdeen AB10 1RS United Kingdom t: +44 (0) 1224 616 000 www.dana-petroleum.com

Section 29 Notice Holder Letter of Support Template

Offshore Petroleum Regulator for Environment and Decommissioning
Department for Energy Security & Net Zero
2nd Floor, Wing C
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

12th November 2024

Dear Sir or Madam

DECOMMISSIONING OF OTTER OFFSHORE INSTALLATIONS – REMOVAL OF ROOF HATCHES FROM THE OTTER TEMPLATE AND WATER INJECTION WELLHEAD PROTECTION STRUCTURES DECOMMISSIONING PROGRAMME - PETROLEUM ACT 1998

We, Dana Petroleum (BVUK) Limited confirm that we authorise TAQA Bratani Limited to submit on our behalf an abandonment programme relating to the Removal of Roof Hatches from the Otter Template and Water Injection Wellhead Protection Structures as directed by the Secretary of State on 25th September 2024.

We confirm that we support the proposals detailed in the Removal of Roof Hatches from the Otter Template and Water Injection Wellhead Protection Structures Decommissioning Programme dated September 2024 (Revision 05) which is to be submitted by TAQA Bratani Limited in so far as they relate to those facilities in respect of which we are required to submit an abandonment programme under section 29 of the Petroleum Act 1998.

Yours faithfully

Jongweon Choi (Nov 12, 2024 13:17 GMT)

Jongweon Choi Chief Executive Officer

For and on behalf of Dana Petroleum (BVUK) Limited



Section 29 Notice Holder Letter of Support

Offshore Petroleum Regulator for Environment and Decommissioning

Department for Energy Security & Net Zero 2nd Floor, Wing C AB1 Building Crimon Place Aberdeen AB10 1BJ

October 25, 2024 | 11:08 AM CEST

Dear Sir or Madam

DECOMMISSIONING OF OTTER OFFSHORE INSTALLATIONS – REMOVAL OF ROOF HATCHES FROM THE OTTER TEMPLATE AND WATER INJECTION WELLHEAD PROTECTION STRUCTURES DECOMMISSIONING PROGRAMME

PETROLEUM ACT 1998

We acknowledge receipt of your letter dated 25th September 2024.

We, Fina Exploration Limited confirm that we authorise TAQA Bratani Limited to submit on our behalf an abandonment programme relating to the Removal of Roof Hatches from the Otter Template and Water Injection Wellhead Protection Structures as directed by the Secretary of State on 25th September 2024.

We confirm that we support the proposals detailed in the Removal of Roof Hatches from the Otter Template and Water Injection Wellhead Protection Structures Decommissioning Programme dated September 2024 (Revision 05) which is to be submitted by TAQA Bratani Limited in so far as they relate to those facilities in respect of which we are required to submit an abandonment programme under section 29 of the Petroleum Act 1998.

Yours faithfully

Docusigned by:

Hugus llamargot

D6E163A7F24E4B1...

Hugues Alamargot Director

For and on behalf of Fina Exploration Limited



Section 29 Notice Holder Letter of Support

Offshore Petroleum Regulator for Environment and Decommissioning

Department for Energy Security & Net Zero 2nd Floor, Wing C AB1 Building Crimon Place Aberdeen AB10 1BJ

October 25, 2024 | 11:08 AM CEST

Dear Sir or Madam

DECOMMISSIONING OF OTTER OFFSHORE INSTALLATIONS – REMOVAL OF ROOF HATCHES FROM THE OTTER TEMPLATE AND WATER INJECTION WELLHEAD PROTECTION STRUCTURES DECOMMISSIONING PROGRAMME

PETROLEUM ACT 1998

We acknowledge receipt of your letter dated 25th September 2024.

We, Fina Petroleum Development Limited, confirm that we authorise TAQA Bratani Limited to submit on our behalf an abandonment programme relating to the Removal of Roof Hatches from the Otter Template and Water Injection Wellhead Protection Structures as directed by the Secretary of State on 25th September 2024.

We confirm that we support the proposals detailed in the Removal of Roof Hatches from the Otter Template and Water Injection Wellhead Protection Structures Decommissioning Programme dated September 2024 (Revision 05) which is to be submitted by TAQA Bratani Limited in so far as they relate to those facilities in respect of which we are required to submit an abandonment programme under section 29 of the Petroleum Act 1998.

Yours faithfully

Docusigned by:

Hugus llamargot

D6E163A7F24E4B1...

Hugues Alamargot Director

For and on behalf of Fina Petroleum Development Limited



Offshore Petroleum Regulator for Environment and Decommissioning
Department for Energy Security & Net Zero

2nd Floor, Wing C

AB1 Building
Crimon Place
Aberdeen

AB10 1BJ

4th December 2024

Dear Sir or Madam

DECOMMISSIONING OF OTTER OFFSHORE INSTALLATIONS – REMOVAL OF ROOF HATCHES FROM THE OTTER TEMPLATE AND WATER INJECTION WELLHEAD PROTECTION STRUCTURES DECOMMISSIONING PROGRAMME PETROLEUM ACT 1998

We acknowledge receipt of your letter dated 25th September 2024.

We, TAQA Bratani Limited, confirm that we authorise TAQA Bratani Limited to submit on our behalf an abandonment programme relating to the Removal of Roof Hatches from the Otter Template and Water Injection Wellhead Protection Structures as directed by the Secretary of State on 25th September 2024.

We confirm that we support the proposals detailed in the Removal of Roof Hatches from the Otter Template and Water Injection Wellhead Protection Structures Decommissioning Programme dated September 2024 (Revision 05) which is to be submitted by TAQA Bratani Limited in so far as they relate to those facilities in respect of which we are required to submit an abandonment programme under section 29 of the Petroleum Act 1998.

Yours faithfully

Sandy Hutchison

Say Horwson

Legal, Commercial and Business Services Director

For and on behalf of TAQA Bratani Limited



Offshore Petroleum Regulator for Environment and Decommissioning
Department for Energy Security & Net Zero

2nd Floor, Wing C

AB1 Building

Crimon Place

Aberdeen

AB10 1BJ

4th December 2024

Dear Sir or Madam

DECOMMISSIONING OF OTTER OFFSHORE INSTALLATIONS – REMOVAL OF ROOF HATCHES FROM THE OTTER TEMPLATE AND WATER INJECTION WELLHEAD PROTECTION STRUCTURES DECOMMISSIONING PROGRAMME
PETROLEUM ACT 1998

We acknowledge receipt of your letter dated 25th September 2024.

We, TAQA Bratani LNS Limited, confirm that we authorise TAQA Bratani Limited to submit on our behalf an abandonment programme relating to the Removal of Roof Hatches from the Otter Template and Water Injection Wellhead Protection Structures as directed by the Secretary of State on 25th September 2024.

We confirm that we support the proposals detailed in the Removal of Roof Hatches from the Otter Template and Water Injection Wellhead Protection Structures Decommissioning Programme dated September 2024 (Revision 05) which is to be submitted by TAQA Bratani Limited in so far as they relate to those facilities in respect of which we are required to submit an abandonment programme under section 29 of the Petroleum Act 1998.

Yours faithfully

Sandy Hutchison

Say Horwson

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

CONTACT

TAQA Bratani Limited Brimmond House, Prime Four Business Park, Kingswells, Aberdeen, AB15 8PU United Kingdom

Tel: +44 (0)1224 275275

