



MURCHISON FIELD DECOMMISSIONING PROGRAMMES

MURDECOM-CNR-PM-REP-00232

Post Consultation Draft Programmes – September 2013





Document Control

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A. Terms and Abbreviations

Abbreviation	Explanation
BTA	Buoyancy Tank Assemblies
СА	Comparative Assessment
CNRI	CNR International (U.K.) Limited
CSV	Construction Support Vessel
DECC	Department of Energy and Climate Change
EDC	Engineer Down and Clean
DPN	Disused Pipeline Notification
EIA	Environmental Impact Assessment
EL	Elevation
FLTC	UK Fisheries Offshore Oil and Gas Legacy Trust Fund Ltd
HLV	Heavy Lift Vessel
IRPA	Individual Risk Per Annum
LAT	Lowest Astronomical Tide
MCAA	Marine & Coastal Access Act
MODU	Mobile Offshore Drilling Unit
NA	Not Available
N/D	No Data
NLGP	Northern Leg Gas Pipeline
OPEP	Oil Pollution Emergency Plan
OGUK	Oil and Gas UK
OPOL	Oil Pollution Operators Liability Fund
OSPAR	Oslo Paris Convention
OSRL	Oil Spill Response Ltd
PL	Pipe Line
PLL	Potential Loss of Life
PON	Petroleum Operations Notice
PSA	Petroleum Safety Authority – Norway
PWA	Pipeline Works Authorisation
ROVSV	Remotely Operated Vehicle Support Vessel
SEPA	Scottish Environmental Protection Agency
SLV	Single Lift Vessel
SSCV	Semi-Submersible Crane Vessel
SSIV	Sub-sea Isolation Valve
ТВС	To Be Confirmed
UKCS	UK Continental Shelf



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C. Appendices

Note that the Environmental Statement (ES) and Comparative Assessment (CA) for pipelines are separately referenced documents in support of this programme (see Section 7) and are therefore not included within the Decommissioning Programme document.

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1 <u>EXECUTIVE SUMMARY</u>

1.1 Combined Decommissioning Programmes

This document contains two decommissioning programmes for (1) the Murchison installations and (2) the Murchison pipelines for each set of associated notices served under Section 29 of the Petroleum Act 1998.

1.2 Requirement for Decommissioning Programmes

Installations:

In accordance with the Petroleum Act 1998, CNR International (U.K.) Limited (CNRI) as operator of the Murchison Field and on behalf of the Section 29 Notice Holders (see Table 1.2 and s8) is applying to the Department of Energy and Climate Change to obtain approval for decommissioning the installations detailed in Section 2.1 & 2.2 of this programme.

Pipelines:

In accordance with the Petroleum Act 1998, CNRI as operator of the Murchison Field and on behalf of the Section 29 Notice Holders (see Table 1.4 and s8) is applying to the Department of Energy and Climate Change to obtain approval for decommissioning the pipelines detailed in Section 2.3 of this programme.

Subject to concluding public, stakeholder and regulatory consultation, the decommissioning programmes are submitted in full compliance with national and international regulations and the DECC guidelines. They set out the principles of the removal activities and are supported by both an Environmental Statement and Comparative Assessment.

The schedule for the main project outlined in this document is expected to last up to nine years.

1.3 Introduction

The Murchison Field lies within UK Block 211/19 and extends into the Norwegian Block 33/9 in the Northern North Sea. The Field is approximately 240km northeast of Shetland and the platform stands in 156m of water. (see section 1.6)

The Playfair Field lies approximately 5km north of the Murchison Field and is 100% owned by CNRI. Playfair was developed as an extended reach well drilled from the Murchison platform. The Murchison platform also supports test-production from the Norwegian Delta reservoir which is 100% owned by Wintershall Norge AS (Wintershall) through a single well drilled from the Murchison platform

Murchison was discovered in 1975 and received development approval in 1978 for a single drilling, production and accommodation facility. The platform was installed and production started in 1980, initially from three subsea wells tied back to the main platform.

A Cessation of Production application was submitted in 2011 and approved in 2012. Cessation of Production is currently expected during Q1 2014 on one month's notice to DECC.

The Murchison platform comprises topsides weighing 24,584te supported by an eight leg steel jacket weighing 24,640 tonnes (excluding piles- see section 3.1 and 3.2). The Murchison large steel platform will also be subject to a separate derogation application process under OSPAR Decision 98/3. See Section 3.2 for further information.

Murchison Field – Decommissioning Programmes



Subsea tie-backs to three remote wells were used to support early production until the platform wells were brought on stream. Oil is exported to the Dunlin platform and then onto Cormorant A and finally to Sullom Voe. Fuel gas is imported from a tie in into the NLGP network.

The Murchison Field decommissioning programmes describe the proposed activities by which:

- 1. All platform and subsea wells will be plugged and abandoned in accordance with Oil & Gas UK Guidelines.
- 2. The platform topside modules will be removed and returned to shore for reuse, recycling or disposal.
- 3. It is recommended that the jacket be removed down to the top of footings at 44m above the seabed (EL -112m LAT) and returned to shore for reuse, recycling or disposal. The jacket footings would then be left in place.
- 4. It is recommended that the drill cuttings pile located within the jacket footings be left *in situ* to degrade naturally with time.
- 5. On completion of the decommissioning programmes a seabed survey will be undertaken to identify oilfield related debris within the platform 500m zone and a 200m wide corridor along each pipeline. All items of oilfield debris will be categorised and in consultation with DECC a management and recovery plan will be agreed. Following completion of the recovery plan, verification of seabed clearance by an independent organisation will be carried out.
- 6. The short early production pipeline bundles and associated subsea equipment will be removed and returned to shore for recycling or disposal.
- 7. The main oil export line (PL115) which is surface laid will be left *in situ* with remedial rock placement over exposed sections. The main pipeline tie in spools, at either end, will be removed and returned to shore for recycling or disposal.
- 8. The Murchison gas export/import pipeline (PL165) which forms part of the NLGP system will be isolated at the Murchison subsea riser tie-in spool as part of the Murchison decommissioning programmes. The pipeline (PL165) is owned by the NLGP parties and does not form part of the Murchison decommissioning programmes. The NLGP SSIV control umbilical forms part of the NLGP system. Preparatory work will be undertaken to cut back the control umbilical from the Murchison Platform to the point of its burial/rock cover. Final decommissioning of the control umbilical will be part of the PL165 decommissioning programme.



1.4 Overview of Installations/Pipelines Being Decommissioned

1.4.1 Installations

Table 1.1: Installations Being Decommissioned					
Field Name	Murchison	Block	211/19	Number of	1
		Co-ordinates	61°23'49.004"N 01°44'25.508"E	platform(s)	
Distance from nearest UK coastline (KM)	≈240km	Distance to Median (if less than 5km)	2km	Platform type	large steel
Number of subsea installations	2	Number of cuttings piles	1	Topside weight (te):	24,584
		Drill cuttings- Estimated Volume (m ³)	22,545m ³	Jacket weight (te):	24,640 (excluding piles)
Number of wells	34	Production type	Oil	Water depth	156m
Platform:	33	Condensate)			
Subsea	1				

Table 1.2 Installations Section 29 Notice Holders			
Section 29 Notice Holders	Registration Number	Equity Interest	
CNR International (U.K.) Limited	Reg. No. 00813187	77.8%	
Wintershall Norge AS	Reg. No. 985224323	22.2%	
AS Norske Shell	Reg. No. 91480777	0%	
Enterprise Oil Norge Ltd	Reg. No. 01682049	0%	
Statoil Hydro ASA	Reg. No. 923609016	0%	
Maersk Oil North Sea U.K. Limited	Reg. No. 03682299	0%	
Norske ConocoPhillips AS (Dissolved)	NA	0%	
Mobil Development Norway AS (Dissolved)	NA	0%	
Exxonmobil Exploration and Production Norway AS	Reg. No 914048990	0%	
Exxonmobil Production Norway Inc.	Reg. No 924956917	0%	



1.4.2 Pipelines

Table 1.3: Pipelines Being Decommissioned			
Number of Export Pipelines (PL115)		(See Table 2.2)	
Number of Infield Pipeline Bundles (PL123, PL124 & PL125)	3	(See Table 2.3)	

Table 1.4: Pipeline Section 29 Notice Holder Details			
Section 29 Notice Holders	Registration Number	Equity Interest	
CNR International (U.K.) Limited	Reg. No. 00813187	77.8%	
Wintershall Norge AS	Reg. No. 985224323	22.2%	
AS Norske Shell	Reg. No. 91480777	0%	
formerly Enterprise Oil Norge Ltd	Reg. No. 01682049	0%	
Statoil Hydro ASA	Reg. No. 923609016	0%	
Maersk Oil North Sea U.K. Limited	Reg. No. 03682299	0%	
Norske ConocoPhillips AS (Dissolved)	NA	0%	
Mobil Development Norway AS (Dissolved)	NA	0%	
Exxonmobil Exploration and Production Norway AS	Reg. No 914048990	0%	
Exxonmobil Production Norway Inc.	Reg. No 924956917	0%	



Table 1.5: Summary of Decommissioning Programmes						
Selected Option	Reason for Selection	Proposed Disposal Solution				
1. Topsides						
Complete removal for re-use and recycling	Meets DECC regulatory requirements	Cleaned equipment refurbished for re-use where possible. Equipment which cannot be re-used will be recycled or go to other disposal routes as				
		appropriate.				
2. Jacket						
Remove jacket down to top of footings	Murchison jacket meets the OSPAR guidelines as a candidate for derogation. Partial removal to top of footings was confirmed as the preferred option in the comparative assessment based on safety and technical considerations	Recommendation - jacket will be removed down to 112m below LAT, recovered material will be returned to shore for recycling wherever possible. Degradation of the remaining footings will occur over a long period and will be recorded on the FLTC FishSafe system and relevant charts for mariners. MCAA application will be submitted in support of works carried out.				
3. Subsea Installations						
Wellhead protection frames will be removed	Meets DECC guidelines to remove all seabed structures to leave a clean seabed	Wellhead protection frames and space frames will be removed and returned to shore for recycling. MCAA application will be submitted in support of works carried out.				
4a. Pipelines						
The main oil export line (PL115) will have remedial rock placement with end tie-in spools removed	PL115 was subject to a formal comparative assessment from which remedial rock placement was selected on the basis of minimal seabed disturbance and reduced risk to personnel	Recommendation - the 16 inch pipeline will be left <i>in situ</i> , with rock placement at the cut ends and exposed sections of pipeline. The remedial rock placement will match the existing rock profile. Degradation will occur over a long period within the rock cover and is not expected to represent a hazard to other users of the sea. MCAA application will be submitted in support of works carried out.				
4b. Flowlines						
The pipeline bundles (PL123, PL124 & PL125) will be removed completely	Bundles meet DECC regulatory requirements for complete removal	The pipeline bundles will be removed and returned to shore for recycling. MCAA application will be submitted in support of works carried out.				
5.Wells						
Abandoned in accordance with Oil & Gas UK Guidelines for the Suspension and Abandonment of Wells	Meets DECC regulatory requirements	PON5, PON15 and MCAA applications will be submitted in support of works carried out.				
6.Drill Cuttings						
Leave in place to degrade	Cuttings pile falls below the	Left undisturbed on seabed to degrade naturally.				
naturally	OSPAR 2006/5 thresholds					
7.Drill Cuttings Interdeper	ndencies					
Partial removal of jacket down to top of footings will permit the drill cuttings pile to be left <i>in situ</i> to degrade naturally over time.						

1.5 Summary of Proposed Decommissioning Programmes



1.6 Field Location including Field Layout and Adjacent Facilities



Figure 1.1: Field Location in UKCS

Figure 1.2: Field Layout





Figure 1.3: Adjacent Facilities Adjacent facilities refer to those facilities potentially impacted by this programme





	Table 1.6: Adjacent Facilities						
Owner	Name	Туре	Distance/Direction	Information	Status		
Fairfield	Dunlin A	Platform	19km South West	Export PL115 tie into Dunlin	Operational		
BP/NLGP	PL165	6" Pipeline + Umbilical	From Murchison riser to NLGP SSIV and cross over Tee	Fuel gas import from NLGP to Murchison, the pipeline will be decommissioned by the NLGP System owners	Operational		
BP/NLGP	NLGP SSIV Umbilical	Umbilical	From Murchison to NLGP SSIV and cross over Tee	Umbilical crosses over PL125	Operational		
BP/NLGP	PL166	6" Pipeline	From Thistle A to NLGP cross over Tee	PL166 crosses over Murchison export line PL115	Operational		
BP/NLGP	PL164	20" Pipeline	From Magnus to Brent	PL164 crosses over PL115	Operational		
Shell	PL1902	16" Pipeline	Penguins to Brent C	PL1902 crosses over PL115	Operational		
Shell	PL2228	4" Pipeline	Brent C to Penguins	PL2228 crosses over PL115	Operational		
Shell	PLU1903	SSIV umbilical	Penguins to Brent C	PLU 1903 crosses over PL115	Operational		
Fairfield	PL2852	4" Pipeline	Thistle to Dunlin	PL2852 crosses over PL115	Operational		
EnQuest	Thistle	Platform	8km West	PL166 6" –pipeline isolation valves at NLGP crossover are controlled from Murchison	Operational		



1.7 Industrial Implications

In planning and preparing for executing the Murchison decommissioning contract/procurement strategy, CNRI as operator of the Murchison Field and on behalf of the Section 29 Notice Holders has undertaken:

- 1. To publish information on the Murchison project and timelines on its decommissioning website: www.cnri-northsea-decom.com
- 2. Publish project information and contact details on the DECC website: www.gov.uk/oil-and-gas-projectpathfinder
- 3. CNRI participated in the PILOT Share Fair event in November 2010 providing one-to-one sessions with the supply chain on the Murchison decommissioning programmes and timeline.
- 4. Representatives of trade associations were invited to the main Stakeholder Engagement sessions held in March and November 2012.
- 5. CNRI is working closely with Decom North Sea and other industry bodies in engagement sessions with the decommissioning supply chain on issues relating to the Murchison decommissioning programmes and timelines. Specific engagement sessions are summarised in Table 5.2 and more details appear in the Stakeholder Engagement Report.
- 6. The FPAL database is the primary source for establishing tender lists for contracts/purchases valued at £250,000 and above, although it is also used under this limit.



2 DESCRIPTION OF ITEMS TO BE DECOMMISSIONED

2.1 Installations: Surface Facilities – Topsides and Jacket

Table 2.1: Surface Facilities Information							
_		Topsides/Facilities		Jacket			
Name	Facility Type	Weight (te)	No of modules	Weight (te)	Number of legs	Number of piles	Weight of piles (te)
Murchison	Fixed steel jacket	24,584	26	24,640	8	32	3,007

2.2 Installation: Subsea including Stabilisation Features

Table 2.2: Subsea Installations and Stabilisations Features						
Subsea installations	Number	Size/Weight	Location(s)	Comments		
Wellhead	2	No data	211/19-2 & 211/19-4	Guide base and tree on 211/19-2 Guide base only on 211/19-4		
Space Frames	2	55 tonnes each excluding piles	Subsea wells 211/19-2 & 211/19-4	Space frame assembly each with 4 – 20 inch dia piles		
Protection Frames	2	27 tonnes each	Subsea wells 211/19-2 & 211/19-4	Steel frames supported off the space frame		



Figure 2.1: 211/19-2 Subsea Installation

Subsea Installation 211/19-4 is similar, but the protection frame is set on the seabed beside the space frame and the subsea tree has been removed.



2.3 Pipeline and Flowlines

Table 2.3: Pipeline/Flowline/Umbilical Information									
Description	Pipeline No. (as per PWA)	Diameter (inches)	Length (km)	Composition	Contents	From - To	Condition	Status	Contents
Oil Export Line	PL115	16"	19.1km	Steel with concrete weight coating	Oil	Murchison to Dunlin	55.5% intermittent rock cover	Operational	Hydrocarbons
Well 211/19-2 flowline	PL123	12.75"	0.75km	Bundle	Oil	211/19-2 to Murchison	_	Out of use	Hydrocarbons
Well 211/19-3 flowline	PL124	12.75″	1.99km	Bundle	Water	211/19-3 to Murchison	Exposed, surface laid		Flushed
Well 211/19-4 flowline	PL125	12.75″	1.23km	Bundle	Oil	211/19-4 to Murchison			Flushed

The extent of existing intermittent rock placement along PL115 is specified in Table 5 of the Comparative Assessment Report.









Figure 2.3: PL123 Schematic PL124 and PL125 are similar but not connected to wellhead.





Figure 2.4 PL165 Schematic

The Murchison Riser will be disconnected at the subsea riser tie-in spool as preparatory work for the future decommissioning of PL165. The disconnection will be undertaken by the Murchison Owners as part of this decommissioning programme. After disconnection at the subsea riser tie-in a DPN will be submitted by the NLGP System Owners for PL165. The decommissioning of PL165 is **NOT** part of this decommissioning programme.

The NLGP SSIV control umbilical was laid without consent under a Pipeline Works Authorisation. The SSIV umbilical controls the subsea valves V8, V7 and V3 from a termination unit and hydraulic power unit located on the Murchison deck. The umbilical and termination unit are owned by the NLGP System Owners. The umbilical will be disconnected from the terminal unit on the Murchison deck, cut subsea at approximately 500m from the Murchison J-tube at the point of burial of the umbilical. The cut section will be recovered to shore for recycling. The final decommissioning of the umbilical will be undertaken as part of the decommissioning programme for PL165 and submitted by the NLGP system owners.



	Table 2.4: Subsea Pipeline Stabilisation Features					
Pipeline	Stabilisation Feature	Number	Weight (te)	Location(s)	Status: Buried/Exposed	
PL115	Concrete Mattresses	4 estimated	6 tonnes each	At pipeline crossing points, partly buried	Can only be recovered when relevant cross over lines are decommissioned	
PL115	Concrete mattress	1	6 tonne	At KP 0.465	Reasonable endeavours will be used to recover	
PL115	Rock placement	13 number of variable length	Estimated 63,000 tonnes	Intermittent along 55% length of PL115. See Table 5 of Comparative Assessment Report for locations/lengths	Will be left <i>in situ;</i> existing rock placed between 1985 and 1987	
PL115	Other – frond mats	10 estimated	ND	5 located within Dunlin 500m zone and 5 located within Murchison 500m zone	Mats partially buried	
PL123	No stabilisation features	N/A	N/A	N/A	N/A	
PL124	Grout mattress	9	3 tonne each	At KP 0.402; 0.439; 0.521; 0.698; 0.913; 0.985; 1.012; 1.042 & 1.108	Reasonable endeavours will be used to recover	
PL124	Frond mats	4	ND	At KP 0.698; 0.985; 1.012 & 1.150	Reasonable endeavours will be used to recover	
PL124	Grout bags	4	25Kg each	At KP 1.725	Reasonable endeavours will be used to recover	
PL125	No stabilisation features	N/A	N/A	N/A	N/A	



2.4 Wells

Table 2.5: Well Information					
Platform Wells	Designation	Status	Category of Well (Ref OGUK Guidelines)		
211/19a-M50	Suspended	Suspended	PL 0-4-3		
211/19a-M69	Oil Production	Live	PL 1-1-3		
211/19a-M49	Oil Production	Live	PL 1-1-3		
211/19a-M54	Oil Production	Live	PL 1-1-3		
211/19a-M65	Oil Production	Live	PL 1-1-3		
211/19a-M14y	Oil Production	Live	PL 1-1-3		
211/19a-M74	Oil Production	Live	PL 1-3-3		
211/19a-M78z	Oil Production	Live	PL 1-3-3		
211/19a-M56	Water Injection	Live	PL 2-3-3		
211/19a-M68	Water Injection	Live	PL 1-1-3		
211/19a-M46	Oil Production	Live	PL 1-1-3		
211/19a-M55z	Oil Production	Live	PL 1-1-3		
211/19a-M51	Oil Production	Live	PL 1-1-3		
211/19a-M73	Oil Production	Live	PL 3-3-3		
211/19a-M45	Oil Production	Live	PL 1-1-3		
211/19a-M64	Oil Production	Live	PL 2-2-3		
211/19a-M66	Oil Production	Live	PL 1-1-3		
211/19a-M77z	Oil Production	Live	PL 1-1-3		
211/19a-M6	Water Injection	Live	PL 1-1-3		
211/19a-M70	Water Injection	Live	PL 1-1-3		
211/19a-M60	Water Injection	Live	PL-2-2-3		
211/19a-M63z	Water Injection	Live	PL 2-3-3		
211/19a-M75x (DELTA WELL)	Oil Production	Live	PL 1-3-3		
211/19a-M67	Water Injection	Live	PL 1-1-3		
211/19a-M53	Oil Production	Live	PL 1-1-3		
211/19a-M76	Oil Production	Live	PL 1-1-3		
211/19a-M16	Suspended	Suspended	PL 4-4-3		
211/19a-M40	Oil Production	Live	PL 1-1-3		
211/19a-M35z	Water Injection	Live	PL 3-3-3		
211/19a-M62	Water Injection	Live	PL 1-1-3		
211/19a-M72y	Oil Production	Live	PL 1-1-3		
211/19a-M71 (PLAYFAIR FIELD)	Oil Production	Live	PL 1-3-3		
211/19a-M47	Water Injection	Live	PL 1-1-3		
Subsea Wells					
211/19-MS2	Oil Production	Suspended	SS 4		
211/19-MS3	Water Injection	Abandoned	SS 1		
211/19-MS4	Oil Production	Abandoned	SS 1		

For further details of well categorisation see OGUK Guidelines for the Suspension or Abandonment of Wells – Issue 4 – July 2012.



2.5 Drill Cuttings

(See also Section 3.6 for further information.)

	Table 2.6: Drill Cuttings Pile Information				
Number of drill cuttings piles	Location (latitude/longitude)	Seabed area (m²)	Estimated volume of cuttings (m ³)		
1	Beneath south east edge of the Murchison platform	6,840m ²	22,545m ³		

Figure 2.5: Map of Murchison Drill Cuttings Pile using Multibeam Echo Sounder





2.6 Inventory Estimates



Figure 2.6: Pie Chart of Estimated Inventories (Installations)

See Tables 4.3, 4.4 and 4.6 in the Environmental Statement for detailed data. Weights are included for topsides, jackets and wells.

The weight of NORM/Hazardous material is less than 1% of the total inventory and includes the densitometers location in the footings.



Figure 2.7: Pie Chart of Estimated Inventory (Pipelines)

See Table 4.5 in the Environmental Statement for detailed data. Inventory excludes the existing rock cover to PL115, estimated at 63,000 tonnes.



3 <u>REMOVAL AND DISPOSAL METHODS</u>

In line with the waste hierarchy, the re-use of an installation (or parts thereof) was first in the order of preferred decommissioning options for assessment.

The Murchison Section 29 Notice Holders assessed options for extending the producing life of the platform, utilising it as an infrastructure hub for third party tie backs and enhanced recovery programmes, but none proved commercially viable and a Cessation of Production Application was submitted to DECC in 2011 and approved in 2012.

The Murchison Section 29 Notice Holders then went onto assess options for the relocation of the platform as a producing asset, but concluded that due to its ageing process technology and the high cost of maintaining the fabric and structural integrity of the 35 year old platform, no technically viable reuse option was available.

Alternate uses for the Murchison facilities for power generation using wind energy, wave and tidal energy and reuse for carbon capture and storage were all considered but no alternate use option was economically viable.

Further details of the options for reuse, relocation and alternate use of the Murchison facilities are given in Section 3 of the Comparative Assessment Report.

The Murchison Section 29 Notice Holders have reviewed, and will continue to review, the platform's equipment inventories to assess the potential for adding to their existing asset portfolio spares inventory.

Recovered material will be landed ashore in the window of 2015 to 2021. It is not possible to forecast the wider reuse market with any accuracy or confidence this far forward. The Murchison Section 29 Notice Holders will continue to track reuse market trends in order to seize reuse opportunities at the appropriate time.

Full details of the Murchison waste hierarchy strategy is reported in detail in Section 3.1 of the Comparative Assessment Report and Section 12 of the Environmental Statement.

3.1 Topsides

Topsides Description: The Murchison Topside Structure comprises 26 modules and individual lifts with a total weight of 24,584 tonnes. The topsides construction is of a modular form on two levels, all situated above the cellar deck. Each individual module has a mezzanine level, with modules M15 and M16 (accommodation) having three levels. Module M17 has two floors with a small plant module beneath it. Overall layout of the topsides is illustrated in Figure 3.1 below.

Methodology: Topsides will be completely removed and returned to shore. Possible methods are outlined in Table 3.2 below. A final decision on decommissioning method will be made following a commercial tendering process.





Figure 3.1: Diagram of Topsides

MODULE	DESCRIPTION
M02	Wellbay East (WBE)
M03	Wellbay West (WBW)
M03a	Bulk Storage Tanks (BST)
M04	Separation Module (SEP)
M05	Metering Module (MET)
M05a	Deareator Column (DEA)
M06	Gas Compression Module (GCM)
M06a	Rolls Royce Generators and Exhausts (RRG)
M07	Gas Sales Module (GSM)
M08	Utilities Module East (UME)
M09	Utilities Module West (UMW)
M10	Drilling Power & Fabrication Workshop (DPF)
M10a	East Platform Crane (ECR)

MODULE	DESCRIPTION	
M11	Mud Module (MUD)	
M11a	West Platform Crane (WCR)	
M12	Drilling Substructure (DRS)	
M12a	Drilling Derrick (DRK)	
M13	MCR and Workshop (MCR)	
M14	Power Generation Module (PWR)	
M15	Accommodation East (LQE)	
M16	Accommodation West (LQW)	
M17	Accommodation New (LQN)	
M19	Flare Boom (FLB)	
M30	Module Support Frame East (MSFE)	
M30a	Module Support Frame West (MSFW)	
M91	Helideck (HEL)	



Removal Methods: Topsides will be completely removed and returned to shore. Possible methods are outlined in Table 3.1 below.

	Table 3.1: Topsides Removal Methods					
1) SSCV (semi-subme 3) Single lift vessel S	ersible crane vessel) 🗹 SLV 🔽	 2) HLV - monohull crar 4) Piece small ☑ 	ne vessel 🛛 🗹 5) Other – briefly describe 🗌			
Method	Description					
Onshore disposal using SSCV	Removal of topsides by module and transport to shore aboard the SSCV for reuse of selected equipment, recycling, break up and/or disposal					
Onshore disposal using HLV	Removal of topsides by module and transport to shore for reuse of selected equipment, recycling, break up and/or disposal					
Onshore disposal using SLV	Removal of topside in a single lift using a SLV and transport to shore for reuse selected equipment, recycling, break up, and/or disposal					
Onshore disposal using 'piece small'	Remove topsides in small pieces using attendant work barge and transport to shore. Heavy lift may be required for flare boom					
Proposed removal method and disposal route	All methods are being carried forward into the tender process. Tender will address any potential trans-frontier shipment of waste issues. A final decision of decommissioning method will be made following commercial tendering process.					

Preparation/Cleaning: Table 3.2 describes the methods that will be used to flush, purge or clean the topsides offshore, **prior to removal to shore.**

	Table 3.2: Cleaning and Preparation of Topsides for Removal					
Waste type	Composition of Waste	Disposal route				
On-board hydrocarbons	Process fluids, fuels and lubricants	Flushing of bulk hydrocarbons will be conducted offshore and residues will be disposed of under an appropriate permit. Fuels and lubricants will be drained and transported ashore for re-use/disposal.				
Other hazardous materials	Planned use of chemicals for cleaning topsides, pipework and tanks	Discharge of chemicals offshore will be managed under the relevant permit. Waste chemicals will be transported ashore for disposal by appropriate methods.				
Original paint coating	Paint containing lead; further survey work is being undertaken to identify other components that may be present	May give off toxic fumes / dust if flame-cutting or grinding/blasting is used so appropriate safety measures will be taken. Painted items will be disposed of onshore with consideration given to any toxic components.				
Asbestos and ceramic fibre	Asbestos has been identified by several surveys; further survey work being undertaken	Appropriate control and management will be enforced. Asbestos and ceramic fibres will be contained and shipped ashore for disposal.				



3.2 Jacket

3.2.1 Jacket Decommissioning Overview

Overview: OSPAR Decision 98/3 prohibits the dumping and leaving jackets wholly or partly in place, but it recognises the difficulties in removing the footings of large steel jackets weighing over 10,000te and installed prior to 9th February 1999. Murchison qualifies for consideration of derogation from OSPAR Decision 98/3 because the jacket weight is greater than 10,000te and it was installed prior to 1999.

The Murchison Section 29 Notice Holders used a screening and evaluation process to arrive at the options for decommissioning the Murchison jacket. This was designed to assess the technical, safety, environmental, societal and economic impact of each option and is consistent with the DECC Guidance Notes.

Decommissioning of the jacket and drill cuttings pile has been evaluated separately to ensure each was considered on its own merits, although there is an interrelationship factor for complete jacket removal as the cuttings pile would have to be disturbed, displaced or removed to gain access to the base of the footings and seabed brace members.

An application has been submitted to SEPA to reclassify the pile/jacket densitometers as irretrievably lost in that the safety risk to divers in attempting to recover the sources from the deep water confined space of the jacket footings is significantly greater than the environmental risk of leaving the densitometers in place to decay naturally over time. Further details of the jacket densitometer options are described in section 3.3.3.2 of the Comparative Assessment Report.



Figure 3.2: Jacket Elevation



Note:

Overall height of jacket is 166m from the seabed.

The height of the footings in the derogation case would be 44m above the seabed (EL -112m LAT).

Murchison Field – Decommissioning Programmes





Figure 3.3 Jacket Footings - Predicted Degradation Rate



3.2.2 Jacket Removal Methods

The different methods CNRI are considering for the removal and disposal of the jacket are identified in Table 3.3.

Table 3.3: Jacket Decommissioning Methods		
HLV (semi-submersible crane vessel) (SSCV) 2) Monohull crane vessel (HLV)		
3) SLV 🗹	4) Piece small	
5) Other – briefly d	escribe 🗹 – Buoyancy tank assemblies (BTAs)	
Method	Description	
Total removal of jacket to clean seabed	None of the decommissioning methods assessed could remove the jacket in a single piece. All methods would remove jacket down to top of footings in large sections and then only the SSCV is able to remove the remaining footings in smaller sections.	
Remove to top of footings using SSCV	Removal of jacket down to top of footings at 112m below LAT, in three large sections for transportation to onshore site for recycling and disposal.	
Remove to top of footings using HLV	Removal of jacket down to top of footings at 112m below LAT, in small sections for transportation to onshore site for recycling and disposal.	
Remove to top of footings using SLV	Removal of jacket down to 102m below LAT, in a single large section for transportation to onshore site for recycling and disposal and then using a construction support vessel to remove jacket in small sections down to top of footings at 112m below LAT.	
Remove to top of footings using BTAs	Attach BTAs to jacket, cut legs down to 112m below LAT and tow jacket in vertical attitude to a deep-water Norwegian fjord for grounding and final demolition, landing piece small sections ashore for recycling and disposal.	
Proposed removal method and disposal route	Tenders for the jacket removal will be asked to nominate an onshore reception facility that is compatible with their removal method. All removal methods, to top of footings, identified above will be carried forward into the tender process. The tender will address any potential trans-frontier shipment of waste issues. A final decision on decommissioning method will be made following a commercial tendering process.	

Comparative Assessment Method:

A comparative assessment (CA) of jacket removal options was conducted following CNRI's CA procedure, which is based on the OSPAR 98/3 framework. The CA used quantitative and qualitative data to draw a balanced assessment across the main criteria of safety, technical feasibility, environmental impacts, societal impacts and project cost, as described in the Comparative Assessment Report.

Outcome of Comparative Assessment:

Table 3.4 below, summarises the outcome of the Comparative Assessment process. For detail CA results for each of the four removal methods considered see table 14 (page 83) of the Comparative Assessment Report.



Table 3.4: Jacket Decommissioning Options CA Summary			
Criteria	Metric	Full removal	Partial removal
Safety ¹	Risk to Personnel (offshore and onshore) Potential Loss of Life (PLL)	0.04 PLL	0.02 PLL
	Risk to other users of the sea Potential Loss of Life per annum (PLL _{pa})	0	1.5 x 10 ⁻⁵ PLL _{pa}
Environmental ^{1,2}	Energy Consumption Total Energy (GJ)	487,750 ⁴ GJ	570,818 ⁴ GJ
	Emissions to the Atmosphere CO2 Equivalent (tonne)	40,416	45,266
	Marine Impacts	100%	100%
Technical ²	Technical Feasibility Qualitative Score	50%	100%
	Ease of Recovery From Excursion ³	87%	100%
	Use of Proven Technology & Equipment	55%	100%
Societal ²	Commercial impact on fisheries	100%	66%
	Socio-economic impact – amenities	100%	100%
	Socio-economic impact - communities	100%	100%
Economic ¹	Total Project Cost (%)	100%	57%

¹Calculated scores for PLL, GJ, tonne and cost

²Qualitative scores with 100% being the highest outcome

³ Excursion refers to a forced deviation from plan

⁴ The energy and emissions assessment (based on the Institute of Petroleum Guidelines) indicates that partial removal results in greater overall energy and emissions than full removal. This reflects the theoretical `cost' (in energy and emissions) of manufacturing the equivalent weight of the footings in new steel to replace that left on the seabed

Table 3.4 summarises the following key issues:

- 1. Whilst the safety individual risk per annum (IRPA) for both full removal and partial removal are less than the Health and Safety Executive (HSE) tolerable region of 1 in 1000, the full jacket removal increases the Potential Loss of Life (PLL) by 100% compared to the partial removal option. This increase in risk is unjustifiable as it violates the principle of reducing risks to as low as reasonably practical.
- 2. Partial removal creates a long term and persistent risk to fishermen from the potential snagging of their fishing gear on the remaining footings. The PLL for fishermen, directly attributable to fishing over the Murchison remains, is 1.5×10^{-5} per annum or 1 in 65,000 years.



- 3. Whilst both full removal and partial removal options cause some environmental disturbance, this is localised and of short duration. There is no significant difference in the energy and emissions between options when implications of replacing the material left on the seabed are factored in.
- 4. Full jacket removal is technically more challenging than partial jacket removal in the 156m water depth around Murchison. The equipment and techniques required to remove and recover the Murchison jacket footings, in particular the 3,000te bottle leg assemblies, do not have a demonstrable track record. There is therefore a higher probability of project failure for full jacket removal compared to partial jacket removal.
- 5. Partial removal of the Murchison jacket does create a physical obstruction for fishing activity. Murchison is not a major fishing ground compared with other areas of the North Sea. The fishing effort in the Murchison area is contained within the ICES rectangle 51F1 (approximately 900nm² or 3,091km²). The obstruction caused by the Murchison footings with a footprint of less than 0.01km² is small compared with the size of 51F1.
- 6. The cost of full jacket removal is 75% higher than that for partial removal.

A full description of the comparative assessment process and outcomes is reported in section 5.2 of the Comparative Assessment Report.

In summary, there is a significant increase in operational safety risk, technical complexity and cost associated with the full jacket removal compared to partial jacket removal. For the partial removal option there will be an increase in snagging risk to fishermen which will be mitigated by supporting the programmes set up by the UK Fisheries Offshore Oil and Gas Legacy Trust Fund (FLTC). FLTC sponsors the FishSafe system that provides up-to-date electronic mapping of oil and gas subsea and surface infrastructure in UK waters which may be a potential hazard to fishing vessels or their equipment.

Recommended Option:

The jacket is removed down to the top of the jacket footings (-112m LAT) with recovered top section(s) returned to shore for reuse, recycling or disposal. The jacket footings left in place will be marked on Admiralty charts and entered into the FLTC FishSafe System.



Table 3.5: Subsea Installations and Stabilisation Features Subsea Option **Disposal route (if** Number of installations and installations applicable) stabilisation features Remove well head and guidebase as Return to shore for reuse part of MODU campaign to P&A well or recycling 211/19-2 Wellhead 2 Remove 211/19-4 guidebase using a CSV Two space frames to 211/19-2 & Return to shore for reuse 211/19-4 recovered using a CSV, or recycling Space frames 2 foundation piles will be cut below seabed Two protection frames to 211/19-2 Return to shore for reuse Protection frames 2 & 211/19-4 recovered using a CSV or recycling

3.3 Subsea Installations and Stabilisation Features

Weights of installations are given in Table 2.2.

The space frames are founded on four 20" diameter corner piles cemented into 26" diameter drilled holes, with a depth in the order of 30m. The space frame piles provide guide pins for installation of the protection frames. No record of the pile cementing procedure or construction records exists. See section 2.6.1 of the Comparative Assessment Report for further details.



3.4 Pipelines/Flowlines/Umbilicals

Decommissioning Options:

Table 3.6: Pipeline Groups/Decommissioning Options			
Pipeline or group	Description of group	Whole/Part Pipeline	Decommissioning options considered
PL115	Oil export line to Dunlin	In part ¹	5, 6, 7, 8, 9, 10
PL123, PL124, PL125	Pipeline bundles	In whole	10

¹PL115 will be left *in situ* under pipeline crossings, see Table 1.6, and at the Fairfield Operated Tie in at Dunlin until decommissioning of the respective pipelines and the Dunlin platform. See Figure 2.2 for pipeline limits.

Key to Options:

1) Remove - reverse reeling	2) Remove - Reverse S lay	3) Trench and bury
4) Rock placement	5) Remedial removal	6) Remedial trenching
7) Remedial rock placement	8) Partial Removal	9) Leave in place
10) Other – remove by cut & lift		

Comparative Assessment Method:

A comparative assessment (CA) of pipeline decommissioning options for PL115 was conducted following CNRI's CA procedure which is based on the OSPAR 98/3 framework. The CA used quantitative and qualitative data to draw a balanced assessment across the main criteria of safety, technical feasibility, environmental impacts, societal impacts and project cost, as described in Section 5.5 of the Comparative Assessment Report.

In summary, the comparative assessment summarises the following key drivers:

- 1. Whilst the Individual Risk Per Annum (IRPA) for all options are less than the Health and Safety Executive (HSE) tolerable region of 1 in 1,000, there is significant differences across the various options. The cut and lift of exposed sections had a PLL of 7.19 $\times 10^{-3}$ which is more than five times the PLL for remedial rock placement PLL of 1.33 $\times 10^{-3}$. This was considered a significant difference.
- 2. The different decommissioning options have different impacts on the long term snagging risk to fishing. The sections of the pipeline currently covered with crushed rock have a rock profile that is designed to be safely overtrawlable by fishing gear. The rock laid down in 1985 has been found to be stable. For the remedial rock placement the fishing PLL is 3.5×10^{-4} pa, compared to removing exposed sections by cut and lift where the fishing PLL is 3.3×10^{-4} pa.
- 3. Remedial rock placement over the exposed sections would physically disturb less than approximately 0.045km². The presence of naturally occurring hard substrate at Murchison,



together with the existing rock cover material, suggests that organisms associated with hard substrates will already be present and not be introduced as a result of additional remedial rock placement. There are no Annex 1 habitats within the length of the PL115 pipeline.

- 4. Remedial rock placement is technically feasible using industry standard operations. The removal of exposed sections by cut and lift also uses standard operations but becomes more complex when considering the large number of cuts required compared to the more conventional single length pipeline repairs. The trench and bury option scored low technically because of concerns over the ability to trench efficiently in the stiff boulder clays at Murchison and the short exposed lengths.
- 5. Societal criteria were not found to be a driver in the ranking of the PL115 decommissioning options. There would be no long term negative impacts on commercial fisheries from removal operations, or from the remedial rock placement option because it would be designed to be overtrawlable.
- 6. There was a significant difference in the total cost of the options assessed, with the cut and lift options being the most expensive at ten times the cost for the leave *in situ* option.

In summary, there is a significant increase in safety risk, technical complexity and cost associated with the pipeline cut and lift options compared to the remedial rock placement option. There was found to be no discernable difference in residual fishing risk for these two options but there is a significant increase in risk for the leave *in situ* options.

Full details of the PL115 options are described in Section 5.5 of the Comparative Assessment Report.

PL123, PL124 and PL125 decommissioning options were assessed against DECC Guidelines for infield small diameter pipelines.

Outcome of Comparative Assessment:

Table 3.7 below summarises the outcome of the Pipeline Comparative Assessment and identifies the recommended option and justification for this recommendation.



Table 3.7: Outcomes of Comparative Assessment			
Pipeline or Group	Recommended option	Justification	
PL115	Option 7	Line condition makes full removal impractical and results in unacceptable risk to personnel; Recovery of the 17 sections of exposed pipeline requires 746 cuts to lift and handle 720 x 12m long sections. The large number of lifts results in unacceptable risk to personnel with no additional benefit to fishermen. Remedial rock covering will minimise snagging risk for fishermen and results in the lowest risk to operational personnel. For remedial rock material quantities see note below. At Murchison, PL115 will be cut at tie in spool and the spool removed. The PL 115 riser will be cut at or below -112m LAT with the upper riser section removed with the jacket and the lower riser section left <i>in situ</i> as part of the jacket footings.	
PL123, PL124, PL125 Option 10		Surface laid, small diameter infield pipeline bundles, overlaying stiff boulder clay; removal will eliminate future snagging risk for fishermen. The pipeline bundles will be cut at the tie in spool connection to the towheads. The towheads are attached to the jacket structure and will be left insitu with the jacket footings. The bundle J-tubes will be cut at or below -112m LAT with the upper J-tube sections removed with the jacket and the lower J- tube sections left <i>in situ</i> as part of the jacket footings.	

The remedial rock cover will use graded crushed rock that matches the existing rock material specification. The graded rock will be placed onto the seabed in a carefully controlled operation using a dedicated rock placement vessel equipped with a dynamically positioned fall pipe. The operation will be monitored by an ROV during placement and after completion to confirm the material is deposited in the correct position on the seabed.

Remedial rock cover will be laid up to existing pipeline crossing stabilisation and protection features. Final details of which will be agreed with the relevant pipeline operators (see Table 1.6)

Fishing over trawl trials will be undertaken on completion of the remedial rock placement work along the PL115 pipeline route to verify over trawl ability of the final rock profile.

It is estimated that up to 52,000 tonnes of graded rock material will be required to cover the exposed pipeline sections which compares to the estimated 63,000 tonnes of rock material placed



during the 1985 to 1987 operations. The area of the seabed directly impacted by the rock placement is approximately 8,500m by 5m which is equivalent to 0.043km².

3.5 Wells

Table 3.8: Well Plug and Abandonment

The wells which remain to be abandoned, are listed in Section 2.4 (Table 2.5), and will be plugged and abandoned in accordance with Oil and Gas UK Guidelines for the Suspension and Abandonment of Wells, Version 4, July 2012.

Platform conductor strings will be cut below the footing elevation of -112m LAT and above the lower guide frame elevation of -125m LAT at approximately -124m LAT. Conductor strings will be cut in accordance with Oil and Gas UK Guidelines for the Suspension and Abandonment of Wells, Version 4, July 2012.

A PON5/PON15/MCAA application will be submitted in support of any such work that is to be carried out.

The M75 Delta well with target in the Norwegian block PL037D will be plugged and abandoned in accordance with the UK Guidelines referenced above. Wintershall will provide relevant details to PSA when the plug and abandonment operations are completed.

All platform wells listed in Table 2.5 will be plugged and abandoned in a campaign commencing in 2013.

The subsea well MS2 will be plugged and abandoned as part of a mobile offshore drilling unit (MODU) campaign covering a portfolio of subsea assets. A final decision on the MODU campaign and schedule will be made following a commercial tendering process, the timing of which will be between Q2-2016 and Q2-2019 depending on market capacity and availability.



3.6 Drill Cuttings

Drill Cuttings Decommissioning Options:

OSPAR recommendation 2006/5 has indicated that if the oil release rate from a cuttings pile is less than 10te/year and the area persistence is less than 500 km²years then the best environmental option for the management of the pile is to leave it in place undisturbed to degrade naturally.

Table 3.9 below gives details of the Murchison drill cuttings pile.

Table 3.9: Drill Cuttings Decommissioning Options					
How many drill cuttings piles are present? 1					
Review of Pile characteristics:	Pile 1				
How has the cuttings pile been	How has the cuttings pile been screened? Actual samples taken				
Date of sampling (if applicable):	April/May2011				
Sampling to be included in pre-decommissioning survey? Yes					
Does it fall below both OSPAR thresholds? ¹ Yes					
Will the drill cuttings pile have to be displaced in order to remove the jacket footings? Yes					
What quantity would have to be displaced/removed? 22,545m ³					
Have you carried out a Comparative Assessment of options for the Cuttings Pile? Yes					
Tick options examined:					
1) Remove and re-inject 🗹	2) Remove and treat onshore $oldsymbol{arsigma}$ 3) Remove and treat offshore $oldsymbol{arsigma}$				
4) Relocate on seabed 🛛	5) Cover 🗌 6) Leave in place 🗹 7) Other 🗌				

¹ Total annual oil loss from the Murchison Pile is predicted to be 1.2 tonnes/year (this value includes both loss to the water column and loss by biodegradation); the persistence (the area of the seabed where the concentration of oil remains above 50mg/kg and the duration that this contamination remains) is predicted to be 25km²years.

Comparative Assessment Method:

The Murchison drill cuttings pile falls below both OSPAR Recommendation 2006/5 Stage 1 screening thresholds for which natural degradation is considered the best environmental strategy; however, in order to assess the full removal of the jacket footings it was necessary to consider full removal of the drill cuttings pile and consequently a Stage 2 assessment was required. A comparative assessment of drill cuttings pile management options was conducted following CNRI's CA procedure which is based on the OSPAR 98/3 framework. The CA used quantitative and qualitative data to draw a balanced assessment across the main criteria of safety, technical feasibility, environmental impacts, societal impacts and project cost, as described in the Comparative Assessment Report.

Recommended Option:

The CA identified leave *in situ* to degrade naturally as the best overall management option for the Murchison drill cuttings pile.



3.7 Waste Streams

Table 3.10 describes how the main waste streams arising from the proposed programmes would be managed. Table 3.11 describes the planned final disposition of the inventories from the installation and pipeline.

	Table 3.10: Waste Stream Management Methods
Waste Stream	Removal and disposal method
Bulk liquids	Flushing of bulk hydrocarbons will be conducted offshore and residues will be
	removed offshore under an appropriate permit during the EDC phase. Other bulk
	liquids may be removed from vessels and transported ashore. Vessel pipe work and
	sumps will be drained prior to removal to shore and shipped in accordance with
	maritime transportation guidelines. Further cleaning and decontamination will take
	place onshore prior to recycling/re-use. Pipeline bulk liquids will be pushed down
	PL115 to Dunlin and onto the Sullom Voe terminal.
Marine growth	Some marine growth will be removed offshore, although the majority will be
	removed at the onshore disposal site. Disposal options will be managed through a
	Decommissioning Environmental Management Plan.
Norm	NORM may be partially removed offshore under an appropriate permit. Onshore
	disposal arrangements will made in accordance with CNRI's Management of Norm
	Procedure SHE-PRO-332.
Asbestos	Asbestos will be contained and taken ashore for disposal in accordance with CNRI's
	Waste Management Procedure SHE-PRO-315.
Other hazardous	The majority of hazardous wastes will be taken ashore and disposed of in accordance
wastes	with CNRI's Waste Management Procedure SHE-PRO-315.
Onshore	Appropriate licensed sites will be nominated by the platform removal contractor.
Dismantling sites	The nominated facility will demonstrate a proven disposal track record and waste
	stream management throughout the deconstruction process and demonstrate their
	ability to deliver innovative recycling options.

For further details of the Murchison Waste Management Plan and CNRI's Corporate Procedures see Section 12 of the Murchison Environmental Statement.

Table 3.11: Inventory Disposition			
Total inventory Planned tonnage to shore Planned left in situ			
Installations	56,961 tonnes ¹	40,676 tonnes	16,285 tonnes ²
Pipelines	7,957 tonnes ³	1,057 tonnes	6,900 tonnes ⁴

¹Includes topsides jacket and well completions

²Includes jacket footings down to -112m LAT and well casings programme beneath the -124m LAT cut level ³Does not include the 63,000te of existing rock placement material

⁴Does not include the total existing and remedial rock placement material together estimated at 115,000te



Recovered material will be landed ashore in the window of 2016 to 2021. It is not possible to forecast the reuse market with any accuracy or confidence this far forward, so the following is a statement of disposal aspirations. Percentages shown relate to the weight of material which is expected to be recovered to shore.

Table 3.12: Reuse, Recycle & Disposal Aspirations of Recovered Material			
ReuseRecycleDisposal			
Installations	5 to 10%	85 – 90%	<5%
Pipelines	<5%	90 – 95%	<5%

Further information can be found in the Environmental Statement – Section 12.3.



4 ENVIRONMENTAL IMPACT ASSESSMENT

The Environmental Statement (ES) presents the findings of the environmental impact assessment (EIA) undertaken by the Murchison Section 29 Notice Holders for the recommended decommissioning option of the Murchison Facilities including the Murchison Platform and associated drill cuttings pile, pipelines and subsea infrastructure.

4.1 Environmental Sensitivities

Table 4.1 describes the important/sensitive features of the receiving environments in the areas in which the decommissioning activities will take place.

Table 4.1: Environmental Sensitivities		
Environmental	Main features	
receptor		
Conservation interests	Annex I Habitats : there are no known Habitats Directive Annex I habitats in the vicinity of the Murchison Field.	
	Annex II Species : the only Habitats Directive Annex II species sighted within the Murchison area is the harbour porpoise.	
Seabed	Seabed features are dominated by the Murchison platform, drill cuttings pile and associated pipelines with no evidence of bedrock or biogenic reefs, pockmarks or unusual or irregular bedforms.	
	Total hydrocarbon levels in the wider Murchison area ranged from 1.0 μ g/g to 450 μ g/g (mean 24.8 μ g/g), while those within the drill cutting pile ranged between 1,310 μ g/g to 10,100 μ g/g. (μ g/g = microgram (one millionth of a gram) per gram).	
Fish	The Murchison Field is located in spawning grounds for cod (Jan to Apr), whiting (Feb to Jun), haddock (Feb to May), Norway pout (Jan to Apr) and saithe (Jan to Apr) and nursery grounds for herring, ling, mackerel, spur dog, haddock, Norway pout and blue whiting.	
Fisheries	The Murchison area is of "low" to "very low" relative value. Fishing effort is "low" to "very low" and dominated by demersal gear types. However, pelagic species historically dominate the landings in the vicinity of the Murchison area targeting mostly mackerel and herring.	
Marine mammals	Marine mammals sighted in and around the Murchison area include minke whale, long- finned pilot whale, killer whale, white-beaked dolphin, white-sided dolphin, harbour porpoise and sperm whale.	
Birds	Seabird vulnerability to oil pollution in the Murchison area is "high" in March, July, October and November and "moderate" to "low" for the rest of the year.	
Onshore communities	An onshore decommissioning facility will be used that complies with all relevant permitting and legislative requirements.	
Other users of the sea	Shipping : the annual shipping density is high to the west of the Murchison field, and medium to low density to the east.	
	Oil and gas industry: See Figure 1.3 and Table 1.6.	
	Defence: there is no known military activity in the vicinity of the Murchison Field, nor	



	any recorded munitions dumping grounds.	
	Telecommunications and cables: there are no known submarine telecommunication and power cables within the vicinity of the Murchison Field.	
	Wrecks: there are no recorded wrecks in the vicinity of the Murchison Field.	
Atmosphere	Local atmospheric conditions are influenced by emissions from Murchison operations, vessel use and nearby oil and gas facilities.	

Further details on environmental sensitivities are described in Table 1.2 in the Environmental Statement for Decommissioning of the Murchison Facilities.

4.2 Potential Environmental Impacts and their Management (Summary)

Overview:

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

Following an assessment of the potential impacts through an environmental impact identification workshop and subsequent risk assessment, the ES concludes that the recommended options to decommission the Murchison 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.

There will be no planned use of underwater explosives during these activities. We acknowledge that there will be a requirement for an environmental protection plan to be produced and submitted to JNCC should this plan change.



Table 4.2: Environmental Impact Management			
Activity	Main Impacts	Management	
Topsides removal	 Energy use and atmospheric emissions Underwater noise Dropped object Accidental hydrocarbon release 	Vessels will be audited as part of selection and pre-mobilisation. Work programmes will be planned to optimise vessel time in the field. Offshore vessels will avoid concentrations of marine mammals. A post decommissioning debris survey will be conducted and any debris recovered. As part of the Murchison OPEP CNRI have specialist oil spill response services provided by Oil Spill Response Ltd. (OSRL) and are members of the Oil Pollution Operators Liability Fund (OPOL).	
Jacket removal	 Energy use and atmospheric emissions Underwater noise Damage or loss of fishing gear Dropped object Accidental hydrocarbon release 	See Topsides removal. Underwater cutting is expected to be the highest source of sound, the operation of well-maintained equipment during decommissioning will ensure noise of operating machinery is kept as low as possible. UK Hydrographical Office and Kingfisher will be informed of all activities and any structures left in place. CNRI will establish lines of communication to inform other sea users, including fishermen, of vessel operations during decommissioning.	
Subsea installations removal	As jacket	As jacket	
Disposal of pipelines	 Energy use and atmospheric emissions Underwater noise Damage or loss of fishing gear Seabed disturbance Dropped object Accidental hydrocarbon release 	See Topsides removal The rock placement will be installed from a dedicated rock placement vessel using an ROV controlled fall pipe equipped with cameras, profiles and pipe tracker to ensure accurate placement of rock over the pipeline and minimise seabed disturbance.	



Decommissioning stabilisation features	See Disposal of pipelines	See Disposal of pipelines
Decommissioning drill cuttings	 Long-term presence of hydrocarbons in sediments Leaching of hydrocarbons from the drill cuttings pile 	Characteristics of the Murchison drill cuttings pile were compared against the OSPAR Recommendation 2006/5 Cuttings Pile Management Regime Stage 1 thresholds, were found to be well below the OSPAR rate of oil loss threshold and the persistence threshold.



5 INTERESTED PARTY CONSULTATIONS

Consultations Summary:

This section will be updated when the consultation phase is completed.

Table 5.1: Summary of Consultees' Comments					
Who	Comment	Response			
Informal consultations					
Scottish Fishermen's Federation (SFF)	Meetings held November 2011 to March 2012 to initially introduce the pre- planning, then to secure input data and receive input assessments for the evaluation sessions prior to the Comparative Assessment workshop held May 2012. Comparative Assessment emerging options explored further during the period July 2012 to October 2012. Attended stakeholder workshops March and November 2012 for which all relevant documentation supplied.	Views incorporated into CA process and evaluation; follow up to explore views on recommendations from the CA Workshop related to PL115 and subsequent exploration of risk profiles			
National Federation of Fishermen's Organisations (NFFO)	Attended March 2012 stakeholder workshop and all relevant documentation supplied for this and the November 2012 workshop. Informal contact maintained since.				
Northern Ireland Fishermen's Federation (NIFFO)	Invited but did not attend March and November 2012 stakeholder workshops, for which all relevant documentation supplied. Alternative meetings offered but not yet taken up.				
Global Marine Systems	Invited but did not attend March and November 2012 stakeholder workshops for which all relevant documentation supplied. Alternative meetings offered but not yet taken up.				



Statutory Consultations		
National Federation of Fishermen's Organisations (NFFO)	Considers the information and rationale behind the project to be informative and comprehensive. Believes it imperative to get the correct balance between what is to remain on the seabed and its impact on future fishing operations.	CNRI gratitude expressed for NFFO's own role in contributing to the development of the programme. Agreed.
	The Federations both North and South of the border have expressed concerns on any part of the original structure remaining in situ but also understand the adverse environmental impact such complete removal would cause, e.g. disturbance of cuttings pile.	Acknowledged
	Restates preference for a structure that is visible (above surface) rather than one below sea level, despite understanding the restrictions on this matter, commenting that surface marker buoys or a fishing friendly structure could be placed over the remaining footings.	CNRI would have serious reservations about the safety implications of this approach and consider that the idea of a fishing friendly structure would be impractical. Concerns also exist over the false sense of security created by surface marker buoys. Proper marking on Admiralty Charts and FishSafe System, overtrawl trials and resulting word of mouth in fishing community preferable.
	all other decommissioning programmes in the future.	
Scottish Fishermen's Federation (SFF)	Appreciation of engagement expressed and primary concerns of safety and the physical impact on fishing of the long term presence of oil industry infrastructure highlighted. Pleased to note P&A intentions, also bundle removal.	Acknowledged and SFF's own contribution to the development of the programme recognised.
	Notes derogation application plans, restating SFF preference for legs to be cut above sea surface level. Recognises interrelationship between drill cuttings and footings.	Recognition by the SFF of the interrelationship between the jacket footings and the drill cuttings pile is helpful but OSPAR Decision 98/3 and IMO rules must govern extent of structure
	Pleased to note that tie-in spools will be removed and are content given the circumstances for remedial rock placement over exposed sections of	removed. Intention to conduct overtrawlability trials reaffirmed.



	PL115, and keen for overtrawlability trials to be undertaken on completion of latter. Notes plans to isolate gas export/import pipeline which forms part of NLGP and recognises that NLGP. decommissioning does not form part of the Murchison decommissioning programme. Reaffirmation of continued appreciation of the openness of dialogue to date and the wish to continue to work closely and positively with CNRI and the project team.	Continued appreciation of the SFF's willingness to engage in dialogue expressed, together with CNRI's own wish to continue this
Northern Ireland Fishermen's Federation (NIFPO)	No response received.	
Global Marine Systems	No comments from GMS who note that no cables are expected to be directly affected in immediate vicinity, but that if in the unlikely event that any interaction were unexpectedly to be necessary in the course of engineering the project then liaison with specific cable owners would be needed.	CNRI confirmed expectations that no cables should be directly affected but in such an event liaison would be undertaken as required.
	Assumption that MoD would be consulted or aware of the project and of the operations for any military cables that may be in the region	Advice from DECC has been sought regarding Ministry of Defence briefing.
	Recommendation that when notice to mariners were arranged for the offshore works, then the Kingfisher Fortnightly Bulletin be updated to include details of the works to inform sea users.	CNRI confirmed that information for mariners will be provided to the Kingfisher bulletin.



Other Consultations Summary (Derogation Case only):

This section indicates the methods used to communicate and consult with interested parties. .

- 1) Website 🗹
- 2) Newsletter 🗹 4) Stakeholder events 🗹 5) 1-1 meetings 🗹
- 3) Individual Correspondence 🗹 6) Media information \Box

Table 5.2: Consultations Summary			
Activity	Date	Format	Key points arising
Website	May 2011	1, 3	www.cnri-northsea-decom.com publishing of key documents supporting the decommissioning programme
Environmental Impact Assessment scoping consultation	August and September 2011	3	Introduction to new stakeholder lead and invitation by phone and email to provide input into EIA scoping report offered to stakeholders (Stakeholder Report describes responses)
Stakeholder event	March 2012	4	See Stakeholder Report for full list of attendees and also Transcript of Meeting on Website – objective to present and get feedback on Murchison Decommissioning Options.
Stakeholder event	November 2012	4	See Stakeholder Report for full list of attendees and also Transcript of Meeting to be published Website – objective to present and get feedback on Murchison's Recommended Decommissioning Option
Newsletters	November 2011 September 2012	2, 5	Issued to platform crew, supported by monthly offshore briefing sessions by decommissioning team members (ongoing)
Section 29 Non Equity Holders	November 2010	3 & 5	Notification letter sent; follow up contact made to establish receipt; presentation made to Maersk in Aberdeen
Aberdeen Grampian Chamber of Commerce	April 2012 February 2013 July 2013	4, 5	Supply chain communication and opportunities explored at meetings; presentation to AGCC members scheduled for June 2013; attended March 2012 stakeholder workshop
DECC Offshore Decommissioning Unit	January 2010 July 2010 September 2010 December 2010 September 2011 March 2012 April 2012 (EMT) July 2012	3, 4, 5	Regular meetings to report progress on developing the Murchison Decommissioning Programme with individual correspondence to clarify s29 notice holders, agreement on baseline environmental survey scopes and development of the Streamline DP Template; additional email and telephone contact as required (ongoing); range of officers attended both stakeholder workshops

Murchison Field – Decommissioning Programmes



	November 2012 April 2013		
Decom North Sea	March 2012 September 2012 November 2012 and on- going	4, 5	Supply chain communication and opportunities discussed formally; regular participation in on- going programme of events; attended both stakeholder workshops; other (unlisted) informal contact at industry events
Decom North Sea/OGUK Conferences	October 2012	4	Formal presentations and informal engagement at the annual conference
UK Fisheries Offshore Oil and Gas Legacy Trust Company Ltd (FLTC)	July 2010 Aug 2011 April 2012 November 2012	3, 4, 5	Meetings to discuss FLTC, development in FishSafe system and impact on comparative assessment process and update on Murchison decommissioning project; email and telephone contact as required; attended November 2012 stakeholder workshop
Greenpeace Research Laboratories	April 2012 January 2013 April 2013 May 2013 July 2013	3, 5	Meetings to review of material presented to the March 2012 stakeholders events and comments arising; discussion of drill cuttings management options, plus related telephone and email contact Consultation response received
Health and Safety Executive	September 2011	4, 5	Pre-planning discussions pending submission of DP and Cessation of Production; attended both stakeholder workshops
Joint Nature Conservation Committee (JNCC)	December 2010 February 2011 April 2012 July 2012 September 2012 November 2012	5	To agree scope for environmental base line survey of Murchison area, results reported back at a meeting in April 2012. Follow up meeting in July and Sept 2012 to report on further studies relating to PL115; attended November 2012 stakeholder workshop
Marine Scotland	March 2012 April 2012 June 2012 November 2012 March 2013 April 2013	4 5 4 5 5 5	Update meetings on stakeholder workshop and briefing on emerging decommissioning options from CA workshop; attended stakeholder workshops in March and November 2012; update briefing for new post holder April 2013
NPF North Sea Decommissioning Conferences, Bergen	February 2011, 2012 and 2013	4	Update to industry of latest status of pre- planning in formal presentations, plus informal engagement
PILOT Share Fair	November 2010	4	Supply chain engagement



		_	
Royal Society for the	April 2012	5	Review and discussion of material presented to
Protection of Birds	November		the March 2012 stakeholders event; attended
	2012		November 2012 stakeholder event
	June 2013		
Scottish Environmental	November	3, 5	Meeting to review the management options
Protection Agency	2011		relating to the Murchison jacket densitometers
	December		and related communication
	2012		
Scottish Oceans	March 2012	3, 5	Review of material presented to the March
Institute			2012 stakeholders event, made available survey
			video footage for review of marine growth
			habitats
Society of Underwater	December	4	Updates to industry of latest status of pre-
Technology	2011		planning in formal presentation at conference,
	March 2013		plus informal engagement
Subsea UK Lunch and	August 2012	4	Presentation of decommissioning options with
Learn Event			opportunity for Q and A and informal
			discussion; publication of presentation on
			Subsea UK website
Commercial Partners	On-going	5	Various on-going
and Third Party			
Infrastructure Partners			
Fairfield Energy	July 2013	3 & 5	Consultation response received
S29 Notice Holders			
Exxon Mobil and Statoil	July 2013	3	Consultation response received
Maersk Oil	August 2013	5	Presentation on DP structure
Northern Lighthouse	July and	3	Consultation responses received
Board, Marine	August 2013		
Conservation Society			
UK, North Sea			
Commission			

Further details are reported in the stakeholder engagement report which supports this application, where copies of consultation responses and CNRI replies are also reproduced.



6 **PROGRAMME MANAGEMENT**

6.1 Project Management and Verification

A CNRI project management team will be appointed to manage the operations of competent contractors selected for the well abandonment, decommissioning, and removal and disposal scopes of work. CNRI Safety, Health and Environmental Management Processes will be used to govern operational controls, hazard identification and risk management. The work will be coordinated with due regard to the interfaces with other operators' oil and gas assets and with other users of the sea. CNRI will control and manage the progress of all permits, licences, authorisations, notices, consents and consultations required. Any changes to this decommissioning programme will be discussed with DECC and approval sought if substantive.

The Murchison Decommissioning Programmes will be managed in accordance with CNRI's Project Delivery Process Procedure.

6.2 Post-Decommissioning Debris Clearance and Verification

A post decommissioning site survey will be carried out around a 500m radius of installation sites and 200m corridor along each existing pipeline route. Significant oilfield related seabed debris will be recovered for onshore disposal or recycling in line with existing disposal methods. Debris remaining within the jacket footings footprint will be left *in situ*.

Independent verification of seabed state will be obtained by trawling the platform area outside the jacket footings footprint. This will be followed by statements of clearance to all relevant government 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 (FLTC) for inclusion in their FishSafe system, and to the United Kingdom Hydrographic Office (UKHO) for notification and marketing on Admiralty Charts and notices to Mariners.



6.3 Schedule



Figure 6.1: Gantt chart of Project Plan

6.4 Costs

An overall cost estimates (covering the items shown in table below) will be provided to DECC, following UK Oil and Gas Guidelines on Decommissioning Cost Estimation.

Table 6.1: Provisional Decommissioning Programmes costs		
Item	Estimated Cost (£m)	
Preparation for Cessation of Production		
Well Plug and Abandonment	Provided to DECC in confidence	
Decommissioning Services Contract (Engineer down & clean)		
Removal Services Contract		
Pipelines and Subsea Services Contract		
Operational Support Contract (post CoP)		
Owner Costs including residual liabilities		
TOTAL	Provided to DECC	



6.5 Close Out

A close out report will be submitted to DECC within four months of the completion of the offshore decommissioning scope, including debris removal and independent verification of seabed clearance and the first post-decommissioning environmental survey.

Any variances from the approved decommissioning programmes will be explained in the close out report.

6.6 **Post-Decommissioning Monitoring and Evaluation**

A post decommissioning environmental seabed survey, centred on sites of the Murchison platform and the subsea wellheads will be carried out. The survey will focus on chemical and physical disturbances of the completed decommissioning operations and compared with the predecommissioning survey.

All pipeline routes and subsea structure sites, including the jacket footings, will be the subject of surveys when decommissioning activity has concluded. A survey of the condition of the footings and the adjacent seabed will also be undertaken at the end of the removal activities. The footings which are proposed to be left in place will be subject to a regular monitoring programme. The survey frequency will be discussed and agreed with DECC.

Survey results will be available once the work is complete, with a copy forwarded to DECC.

After the surveys have been sent to DECC and reviewed, a post monitoring survey regime will be agreed by both parties, typically one (or more) post decommissioning environmental surveys and structural pipeline surveys.

6.7 Management of Residual Liability

In the close out report described in Section 6.5, the person responsible for the subsequent management of on-going residual liabilities including managing and reporting the results of the agreed post- decommissioning monitoring (described in Section 6.6), evaluation and remedial programme, will be nominated. The nominated person will also be the contact point for any third party claims arising from damage caused by any remains from the Murchison decommissioning programmes. The Murchison footings which are proposed to be left in place remain the property and responsibility of the Murchison Field licensees.



7 <u>SUPPORTING DOCUMENTS</u>

Table 7.1 provides a list of supporting documents that are referenced in the programmes but which are not presented in the Appendices.

Table 7.1: Supporting Documents		
Document Number	Title	
MURDECOM-BMT-EN-REP-00198	Environmental Statement	
MURDECOM-CNR-PM-REP-00225	Comparative Assessment Report	
MURDECOM-CNR-PM-REP-00233	Stakeholder Engagement Report	
MURDECOM-XDS-PM-REP-00062	Murchison Decommissioning Comparative Assessment – Final IRC Report	

Current versions of the supporting documents identified in Table 7.1 are available electronically on the web site <u>www.cnri-northsea-decom.com</u>.



1. PARTNER LETTER OF SUPPORT

A copy of the letter of support from current equity holders in the field will be provided here. Originals will be submitted with final version of the Programme(s).



9 EXPERT VERIFICATION STATEMENT



Xodus House /50 Huntly Sneet /Aberdeen /AB10 TRS /UK T+44 (0/122/4028000 E vi/u@xodusgrous.com www.sodusgroup.com

3 May 2013

Expert Verification Statement

Murchison Decommissioning Comparative Assessment

This statement has been prepared by Xodus Group Ltd (Xodus) in compliance with the UK Department of Erergy and Climate Charge (DECC) Decommissioning Guidance Notes on Independent expert verification (Ref 1).

As independent Review Consultant (IRC), Xodus undertook a review of the Murchison Decommissioning Comparative Assessment comprising five phases, which can be summarised as:

- Phases 1 and 2 review studies produced or commissioned by CNRI to inform the Comparative Assessment (CA) process
- Phase 3 review the approach to CA of Murchison facilities by CNRI, including review of CNRI CA Methods and Procedures (Ref 2 and Ref 3)*, and agree the level of participation as an independent review consultant;
- Phase 4 review the CA process (pre-CA Report issue) and then review the Draft CA Report prepared by CNRI (Ref 4);
- Phase 5 produce and publish the final IRC report involving collation of all IRC review work, including this ssue of independent certification of CA process undertaken by CNRI for relevant Murchison facilities.

As summarised in its final report [MURDECOM-XDS-PM-REP-00062], Xodus verifies that:

- For the subjects covered in reports from Phase 1 and 2 studies, there was sufficient information in place for CNRI to support a comparative assessment (CA), and the associated environmental impact assessment (EIA) for Murchison;
- For the comparative assessment as described in the CNRI Draft CA Report (with the support of earlier informing reports) there is sufficient information in piace for CNRI to support the development of a Murchisor Decommissioning Programme;
- CNRI has covered stakeholder consultation/engagement in a thorough and transparent manner throughout the project.

* as already certified by the IRC (26 June 2012) (MURDECOM-XDS-PM-PR0-00205)

Issued: Checked: Approved:

- DECC, Guidan & Notes, Decommissioning of Offshore D i and Gas it stallations and Pipelines under the Petroleum Act 1998. Varsion & March 2011 (p64).
- 2. CNRI Comparative Assessment Method Stalement, Dos No DECCM CNR PM-PRO 00081 Rev 81.
- 3. ONRI Comparative Assessment Procedure. Doc No MLRDECOM-CNR PM-PRO-00136 Rev A2.
- 4 CNRI Murchison Decommissioning DrzR Comparative Assessment Report, Issued for pre-read for Stakeholder Workshop 8 November 2012). MURDECOM CNR PM-REP-09225

Registered Office: Xodus House .50 Huntly Street Aberdean .A810 13S. Registered Number: SC286421 (Scotlard) VAT Number: 38967341668



APPENDIX 1: STATUTORY CONSULTEES CORRESPONDENCE

Copies of letter(s) to and from statutory consultees are provided here.

- 1. Letter from the National Federation of Fishermen's Organisations (NFFO)
- 2. Letter from CNRI to the NNFO
- 3. Letter from the Scottish Fishermen's Federation (SFF)
- 4. Letter from CNRI to the SFF
- 5. Letter from Global Maritime Systems (GMSL)
- 6. Letter to the GMSL

Originals of the above correspondence will be submitted with final version of the Programme(s).



From: Alan Piggott [mailto:Alan@nffo.org.uk] Sent: 18 July 2013 08:25 To: Carol Barbone Subject: Murchison Decom

Morning Carol Please excuse my tardiness on this topic and see comments below;

The Federation has been involved with the decom program of the Murchison Platform and infrastructure and found the information and rational behind the project to be informative and comprehensive.

We believe it to be imperative to get the correct balance between what is to remain on the seabed and its impact on future fishing operations.

The Federations both North & South of the boarder has expressed their concerns on any part of the original structure remaining in situ but also understand the adverse environmental impact such complete removal would cause (disturbance of cutting piles ect).

As practical fishermen we would rather have a structure we could see (above surface) than one below sea level, understanding the restrictions on this matter our only comment would be to suggest surface marker buoy's or a fishing friendly structure to be placed over the remaining leg stumps of the Murchison.

Having said that the Federation feels that this program of decommissioning has been open, honest and informative and may well be the format for all other decom programs in the future.

Best Regards

Alan Píggott

General Manager

National Federation of Fishermen's Organisations

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Mr Alan Piggott General Manager National Federation of Fishermen's Organisations 30 Monkgale York YO31 7PF

14 August 2013

Dear Alan

Murchison Draft Decommissioning Programmes Consultation

Further to my earlier email acknowledging receipt of your response to the draft Murchison Decommissioning Programmes, I am writing now to respond formally to your points.

We thank you for your comments describing the information and rationale behind the decommissioning programme as informative and comprehensive and we are grateful for the role which you have played in enabling us to achieve this through your participation in discussions over the last two years. We are also appreciative of your remarks regarding the approach we have taken during the development of the plans and suggestion that this may set a precedent for others.

With regard to achieving the correct balance for the programme and its impact on future fishing operations, your understanding of the balance to be struck between fishing impacts from any elements of the structure which may remain on the seabed and the adverse impacts that complete removal would cause is helpful.

However, while we understand your preference for a visible (above surface) structure despite the restrictions which prevent this, we would have serious reservations about the safety implications of the rapid deterioration of the structure at the splash zone and subsequent collapse and the potential for more serious damage to vessels just below the water line once it were no longer visible.

We do not consider the idea of a fishing friendly structure to be a practical one in the case of Murchison, not least because of the longevity such a structure would need to have. Similarly, surface marker buoys could do more harm than good by providing a false sense of security because of the 'd'ift' that might occur as a result of tidal differences and the very deep water of the Murchison Field.

As such, we consider that safety of all users of the sea would be better served by ensuring proper marking of Admiralty Charts, with entry of data on any elements of the structure left behind into the FishSafe System and, following the overtrawl trials we intend to carry out, through word-of-mouth between fishermen involved in the trials and their peers.

Please do come back to me if you would like to discuss this further or if you would find it helpful to meet again in person.

Kind regards

Carol Barbone Stakeholder & Compliance Lead

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www.sff.co.uk

Our Ref:

Your Ref:

20^{tr} June 2013

Carol Barbone Decommissioning Consultant CNR International (U.K.) Limited St. Magnus House Guild Street Aberdeen AB11 6NJ

Dear Carol,

CNR International: Murchison Field Decommissioning Programme (Consultation Draft Programme – May 2013)

I refer to CNR International's Murchison Decommissioning Programme and the Consultation Draft Programme - May 2013 documentation.

As per our recent meeting of 5th June 2013 and the presentation provided by CNR, we once again place on record our appreciation of the general updates received to date and also the clear explanation of the processes that has led CNR to make its Murchison Field decommissioning recommendations.

The concerns of fishermen remain primarily that of safety and the physical impact on the fishing grounds of the long term presence of all incustry infrastructure on the seabed.

We are pleased to note that the associated subsea and platform wells are to be plugged and abandoned and that the short early production pipeline bundles and related items will also be removed.

We note that the Murchison steel platform itself will be subject to a separate derogation application under OSFAR Decision 98/3, where CNR's recommendation is for the jacket to be removed down to the top of footings at 44m above the seabed. We fully recognise the reasons provided for leaving the footing in situ on this particular occasion, but as stated during the course of our recent meeting, the SFF's preference in cases where Platform foolings are not deemed feasible for removal is for the legs to be cut above sea surface level.

In relation to the drill cuttings pile located within the jacket footings, we note that the cuttings are within OSPAR thresholds for remaining in situ to degrade naturally with time and recognise the linkage here with the jacket.

Memberr Ange Suttern Fishermenn Association Medie & Num West Haltermens Association Sectors Pology Revenues Association Lar Tude Eldermes & Austriation Estastemen's Automoun (South of U.) Scolute annocation

Graney Figherine Anno Jelion

Scottish WhiteBith Producers' Association Ltd. Shetland Tishermans Alsociation

VA! Reg. No: 605 095 748





With regard to the 19km main oil export pipeline (PL115), we are pleased to note that the tie-in spools at either end will be removed and are content given the circumstances (crosses under 4 other live pipelines and an umbilical crossing, wall thickness concerns plus 56% of pipeline already rock covered) for this surface lad line to be left in situ with remedial rock placement over exposed sections. Ideally, we would appreciate if fishing overtrawlability trials could be undertaken on completion of the remedial rock placement work.

It was further noted that the Murchison gas export/import pipeline which forms part of the Northern Leg Gas Pipeline (NLGP) system will be isolated at the Murchison subsea riser tie-in spool as part of the Murchison decommissioning work, but that the pipeline (PL165) is owned by the NLGP parties and does not form part of the Murchison decommissioning programmes.

The Federation having stated the above position, would reaffirm its continued appreciation of the openness of the dialogue hitherto and its wish to continue to work closely and positively with CNR International and your Project Team, as you work through the challenges before you.

Yours sincerely.

Margador

Steven Alexander Director of Marine Operations

cc: SFF Sustainable Fisheries Committee





Mr Steven Alexander Director of Manne Operations Scottish Fishermen's Federation 24 Rubislaw Terrace Aberdeen AB10 1XE

14 August 2013

Dear Steven

Murchison Draft Decommissioning Programmes Consultation

Further to my earlier email acknowledging receipt of your response to the draft Murchison Decommissioning Programmes, I am writing now to respond formally to your letter.

We are grateful for your appreciation of the dialogue between our two organisations to date and are particularly aware of the value of the SFF's own role in contributing extensive knowledge to the development of our plans.

We fully understand that the concerns of fishermen remain primarily that of safety and the physical impact on the fishing grounds of the long term presence of oil industry infrastructure on the seabed. This has been incorporated at every stage of the development of the Decommissioning Programmes, most particularly in the comparative assessment process.

Your recognition of the interrelationship between the jacked footings and the drill outtings pile is helpful. However, while noting the SFF's preference for the jacket legs of derogation structures to be cut above sea surface level, we are bound by OSPAR Decision 98/3 and International Maritime Organisation rules on this. Furthermore, we would have serious reservations about the safety implications of the rapid deterioration of the structure and subsequent collapse at the splash zone and the potential for more serious damage to vessels just below the water line once it were no longer visible.

With regard to the main oil export pipeline, PL115, we have taken on board your request for fishing overtrawlability trials to be undertaken on completion of the remedial rock placement work and this has been written into our Decommissioning Programme for the pipeline.

Like the Federation, we would also like to reaffirm our continued appreciation of the openness of the dialogue hitherto and our own wish to continue to work closely and positively with the SFF, whose experience has been of such importance in informing our understanding, as our project moves forward.

Yours sincerely

Carol Barbone Stakeholder & Compliance Lead

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From: Wrottesley, John (GMSL) [mailto:John.Wrottesley@globalmarinesystems.com]

Sent: 18 July 2013 11:16

To: Carol Barbone

Subject: RE: MURCHISON DECOMMISSIONING - STATUTORY CONSULTATION

Hi Carol,

Many thanks for your email – my sincere apologies that you have had to chase but it's been a very busy period lately, but fortunately I have no significant response for this programme.

I have not received any further comments from colleagues, and don't have any specific comments on the programme of works itself as no cables should be directly affected in the immediate vicinity, and if any interaction were unexpectedly to be necessary in the course of engineering the project, then it would be necessary to liaise with specific cable owners. However I think it is unlikely due to the proximity of the platform from any current known cables. I assume that the MoD would be consulted or aware of the project and would be aware of the operations for any military cables that may be in the region.

I would recommend that when notice to mariners were arranged for the offshore works, then the <u>kingfisher fortnightly bulletin</u> be updated to include details of the works to inform sea users.

If you require anything else from myself then please let me know – I will be available today and tomorrow and will ensure I respond quickly if you need anything else.

Kind regards,

John





Mr John Wrottesley Permitting Manager Global Marine Systems Ltd New Saxon House Winsford Way, Boreham Interchange Chelmsford Essex CM2 5PD

14 August 2013

Dear John

Murchison Draft Decommissioning Programmes Consultation

Further to my email acknowledging receipt of your response to the draft Murchison Decommissioning Programmes, I am writing now to respond formally on how we are addressing the points you covered.

I can confirm that your expectation that no cables should be directly affected in the immediate vicinity of the area where works will be carried out concurs with our own, and that if any interaction were unexpectedly to be necessary in the course of engineering the project then liaison with specific cables would be undertaken.

Meanwhile, we are taking advice from DECC with regard to consultation and briefing of the Ministry of Defence to ensure that they are both aware of the proposed decommissioning programmes and associated works with respect to any military cables that might be in the region.

As far as notice to mariners is concerned ahead of offshore works, we will arrange for provision of information to the Kingfisher fortnightly bulletin to ensure that users of the sea are kept informed. A note to this effect confirms this intention in the post-consultation Decommissioning Programme.

Thark you once again for your comments which are helpful in refining the decommissioning proposals.

Kind regards

Carol Barbone Stakeholder & Compliance Lead