North Sea Producer FPSO
Annual Environmental Statement 2015

North Sea Production Company Limited
City Wharf
Shiprow
Aberdeen
AB11 5BY

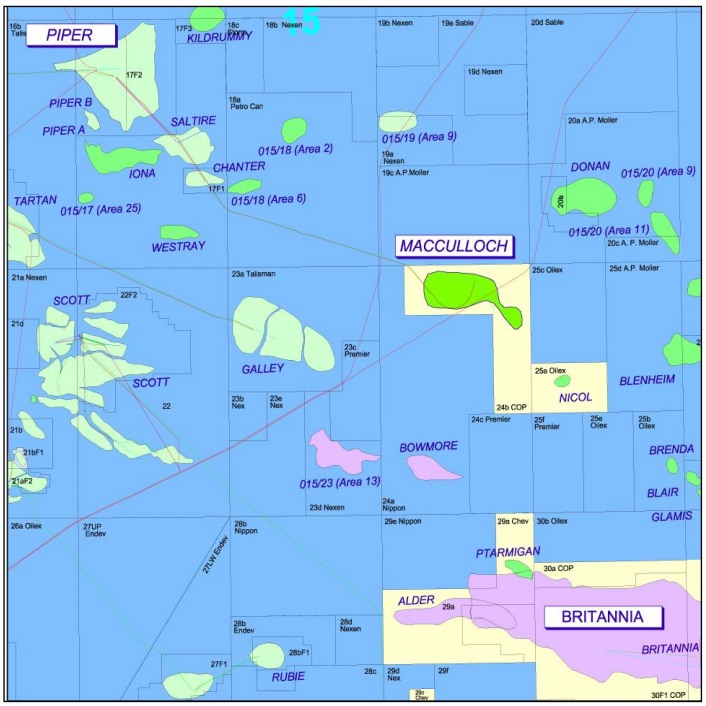
Introduction

This document represents the Annual Environmental Statement for the North Sea Producer (NSP) Floating Production, Storage and Offloading (FPSO) facility owned by Maersk FPSOs and operated through the North Sea Production Company Limited (NSPCL) in joint venture with Odebrecht. The purpose of this statement is to demonstrate the continual improvement in environmental performance and goals in operating our facility during 2015 in line with the requirements set out in OSPAR Recommendation 2003/5.

Maersk FPSOs provide operational support, personnel, maintenance, logistical services and management systems to NSPCL. Our environmental commitments stated in our Environmental Policy are implemented through Maersk FPSOs' Environmental Management System (EMS). Maersk FPSOs' EMS is compliant with the ISO 14001:2004 Standard and through audits and reviews we strive to continually improve it.

About NSPCL

NSPCL is a joint venture between A.P.Møller-Maersk Group and Odebrecht Óleo e Gás S.A. and was awarded the contract by the licence holders for the exploitation of the MacCulloch field. NSPCL were the pipeline operator and holder of the Pipeline Works Authorisation until the vessel departed the field on the 13th August 2015.



The NSP FPSO was moored in the MacCulloch Field, 250 km northeast of Aberdeen, Scotland until 13th August 2015. The unit is 236 metres long, 40 metres wide with a draught of 15 metres and operated in a water depth of 150 metres.

The export pipelines are approximately 35 km long, and prior to cessation of production, transported oil and gas via the third party owned Piper B facility. The NSP FPSO was fabricated in early 1997 with the conversion of the Dagmar Maersk petroleum tanker into a fully integrated FPSO facility. Production from the MacCulloch field started in August 1997.

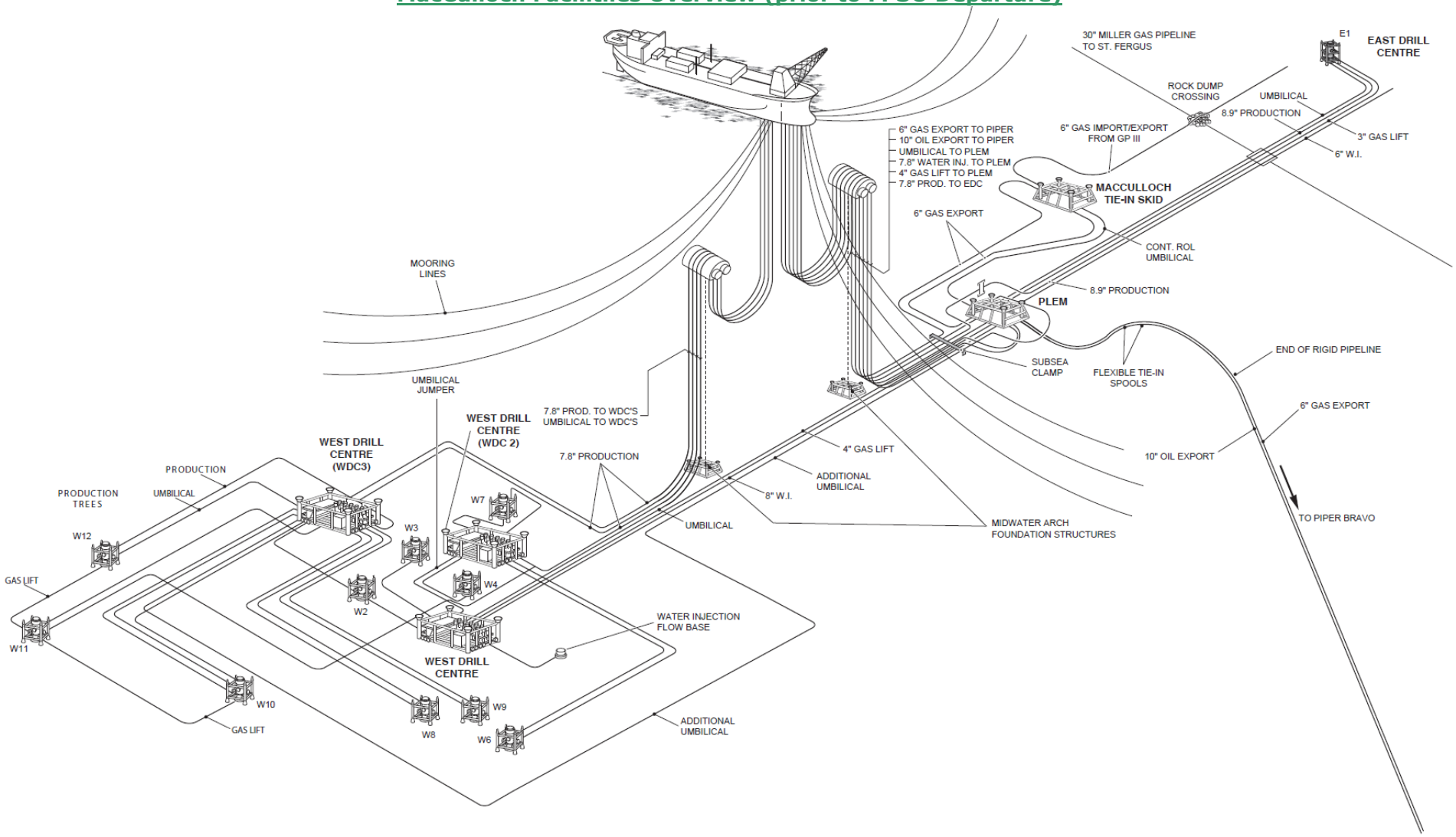
As illustrated in the schematics below, a forward-mounted internal turret ensured the correct mooring of the FPSO with a mooring spread connected to a chain table. The well fluids from both East and West Drill Centre were transferred through a swivel stack in the turret.

In 2015, the annual oil production from the MacCulloch Field was 723,655 barrels (bbls), with average daily production being 6,519 bbls, while online. There was no gas export in 2015.

The MacCulloch field ceased production on 3rd May 2015. This was followed by pipeline and FPSO topsides cleaning, flushing workscopes and the disconnection of all control and pipeline systems, before final disconnection of the mooring chains. On 13th August

2015 the NSP FPSO was towed from the MacCulloch field to the ABLE Middlesbrough Port, on Teeside. Its future has yet to be determined.

MacCulloch Facilitiies Overview (prior to FPSO Departure)



NSPCL Environmental Policy

NSPCL is committed to the protection of the environment. Our level of ambition is reflected in the emphasis we place on all environmental aspects of managing our operations both offshore and onshore. This commitment is stated in NSPCL's Environmental Policy, which governs the EMS.

ENVIRONMENTAL POLICY

The North Sea Production Company Ltd is committed to protecting the environment and to minimising the environmental impact of our operations. We aim to conduct our activities in a manner which meets or exceeds the environmental standards required of us. We recognise that this goal is only met through the involvement and empowerment of all of our employees and contractors.

To achieve our environmental goals, we will continue to:

- Comply with all regulations, class requirements and industry best practice affecting our environmental performance.
- Through compliance with the principles of ISO 14001, operate an Environmental Management System that allows us to control, monitor and reduce the environmental impact of our operations.
- Verify the effectiveness of our Environmental Management System by conducting regular inspections, audits and reviews to help us identify areas where we can improve.
- Reduce the environmental impacts of operations through emphasising pollution prevention and implementing measures for mitigating consequences of accidental pollution.
- Ensure that all our employees and contracted staff are aware of their duty to act responsibly on environmental issues and are sufficiently trained and competent to meet the requirements of their post and of the environmental management system.
- Ensure that all employees and contractors are aware of their moral obligation to intervene when potentially environmentally unsafe acts or omissions are observed.

David Cannon
General Manager
North Sea Production Company Ltd
March 2011

Environmental Management System and ISO 14001:2004 standard

The NSPCL Environmental Policy Statement is implemented though Maersk FPSOs' EMS, which is an integral part of Maersk FPSOs' Global Business Management System (GBMS).

Maersk FPSOs has developed and implemented an EMS for its operations, which is certified to the ISO 14001:2004 standard. Initially Maersk FPSOs were certified with ISO 14001 in August 2006 by Lloyd's Register Quality Assurance Ltd (LRQA), and re-certified in January 2015, valid until January 2018.

Representatives of NSPCL and external environmental advisors have undertaken numerous visits to the NSP FPSO and the shore base to conduct training sessions and internal environmental audits. During these visits we witnessed strong commitment and a positive attitude from all of the employees.

Lloyd's Register LRQA

CERTIFICATE OF APPROVAL

This is to certify that the Environmental Management System of:

Maersk FPSOs UK Limited
Office & North Sea Production Company Ltd
City Wharf, Shiprow
Aberdeen, AB11 5BY
Scotland
United Kingdom

has been approved by Lloyd's Register Quality Assurance to the following Environmental Management System Standard:

ISO 14001:2004

The Environmental Management System is applicable to:

Operation and Management of FPSO-units, including local onshore administration.

This certificate forms part of the approval identified by certificate number CPN6010355.

Approval Certificate No: CPN6010355/A

Original Approval: 30th August 2006
Current Certificate: 5th January 2015
Certificate Expiry: 4th January 2018

Issued by: Lloyd's Register EMEA for and on behalf of Lloyd's Register Quality Assurance Limited

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Lloyd's Register EMEA, Strandvejen 104A, 2900 Hellerup, Denmark for and on behalf of Lloyd's Register Quality Assurance Ltd., 1 Trinity Park, Bickenhill Lane, Birmingham, B37 7ES, United Kingdom

The Environmental Management Principles

The overall purpose of our EMS is to ensure a systematic approach to environmental improvements and compliance, which is achieved through the PDCA (Plan, Do, Check, Act) cycle.

Based on the management review, new targets are set, and procedures are improved to ensure continuous improvement.

This stage involves internal and external auditing, management review and other measures taken to evaluate the effectiveness of the management system.

During the planning stage, our environmental performance is assessed and objectives and targets for improvement are set.

This implementation stage is where measures are taken to ensure that continuous environmental improvement is achieved and targets are being met.

The Plan-Do-Check-Act cycle

As part of the management system, we set objectives and targets for environmental improvements on a continuous basis, and we implement best available technology/best environmental practice where technically and economically feasible. We measure environmental performance through various means, including local and corporate metrics, which help to implement operational procedures to ensure our targets are met. In addition, Maersk FPSOs has established voluntary Green Teams offshore which helps to improve environmental awareness and ensure that activities are conducted with a high regard to the marine environment.

Key Elements of NSPCL's EMS

NSPCL has established procedures for ensuring compliance and improving environmental performance through a number of key elements of the EMS including:

- Development and maintenance of the Environmental Aspects and Impacts Register to address the risks posed to the environment by operations on the NSP FPSO.
- The Environmental Management Manual which defines responsibilities and directs personnel to key procedures which form part of the overall Management System, as well as supporting procedures contained within other management manuals.
- Monitoring, internal monthly and annual review of environmental performance.
- Implementation of corrective actions to facilitate the overall goal of continuous improvement. All emissions and discharges, including incident reports and near misses, are systematically recorded through use of local and corporate metrics and corrective actions are tracked.
- Periodic management reviews to define, set and assess environmental objectives and ensure their continued relevance in the light of changing circumstances. The Annual Management Review ensures that these objectives are translated into plans and programmes to ensure successful implementation.
- Our objectives and targets for improving environmental performance are also facilitated via voluntary led offshore Green Teams.

To support continuous and effective improvement, Maersk FPSOs has developed web systems that incorporate these procedures into the governance and management of its activities. These are:

SIRIUS – this is a graphical web-based integrated QM/HSE management system which provides links between processes, organisation, compliance and technical manuals. This web based management system affords a facility for providing visibility of process flows, procedural documents and roles and responsibilities. It ensures that all employees have access to safe and efficient work processes that are in compliance with relevant quality and legal requirements.

Compliance standards are linked to the process where relevant, demonstrating how Maersk FPSOs complies with the requirements of the standards. All EMS procedures are systematically managed to ensure that they are up-to-date, accurate and traceable.

SYNERGI - this database is used for tracking all incidents, accidents and near misses, including environmental incidents, and it is used as a management tool for control and analysis of corrective actions. It also provides a transparent and auditable trail of environmental indicators used as part of performance reporting and monitoring.

Sustainability Reporting

NSPCL, through Maersk FPSOs, reports its resource and energy consumption and emissions on an annual basis to the A.P.Møller-Maersk Group. Maersk FPSOs also publishes its own Sustainability Report, which states, "We support a precautionary

approach to environmental changes; undertake initiatives to promote greater environmental responsibility; and encourage development and diffusion of environmentally friendly technologies. We manage environmental aspects systematically and continuously improve our performance by setting objectives, training personnel and monitoring environmental impacts."

Environmental Aspects

Environmental aspects are those elements of our activities that can interact with the environment, i.e. the definite or potential causes of environmental impact. Although the actual impacts on the environment cannot be controlled, the aspects of the activities can be. Maersk FPSOs has implemented and maintained a process flow to identify the environmental aspects of its activities, products and services that it can control or influence.

The most significant environmental aspects from our activities at the NSP FPSO were identified and listed below:

- **Discharge of water** originating from the reservoir, produced when extracting the oil (produced water discharge).
- **Chemical use and discharges** during process and utilities operation.
- **Air emissions** generated during combustion of fuel gas and diesel for the power generation, gas compression, pumping oil onshore and the flaring of excess gas.
- **Waste generation** disposal from operational and domestic activities.

The performance of the NSP FPSO's operation with respect to the significant aspects of our activities is summarised in the sections below. These data have been reported to the Regulator via the UK Environmental Emissions Monitoring System (EEMS).

Managing emissions and discharges

Oil in Produced Water discharges

Discharges of oil in produced water are regulated under the Offshore Petroleum Activities (Oil Pollution Prevention and Control) Regulations 2005 (as amended) (OPPC Regulations). The conditions of the MacCulloch OPPC permit require that the concentration of dispersed oil in produced water (OIW) discharged shall not exceed 30 mg/l averaged over a calendar month and 100 mg/l at any time.

NSPCL aimed to maintain the total quantity of oil discharged in produced water and the average concentration of oil (mg/l) discharged to sea at 10% below the permit limits. In 2015, the concentration of oil discharged in produced water was in compliance with the monthly limit (Figure 1). In 2015 the volume of produced water discharged was lower than 2014, however, the oil discharged overboard was higher; this is due to cessation of production and the decommissioning activities undertaken.

During normal operations on the NSP FPSO (January – May 2015), slops tanks with oil skimming capabilities were utilised as a final stage of treatment for produced water and it was this polishing process that routinely resulted in low concentrations of oil in water.

The flushing, cleaning and disconnection procedures in preparation to shutdown and removal of the NSP from the MacCulloch field resulted in increased oil in water discharges in 2015 (Figure 1).

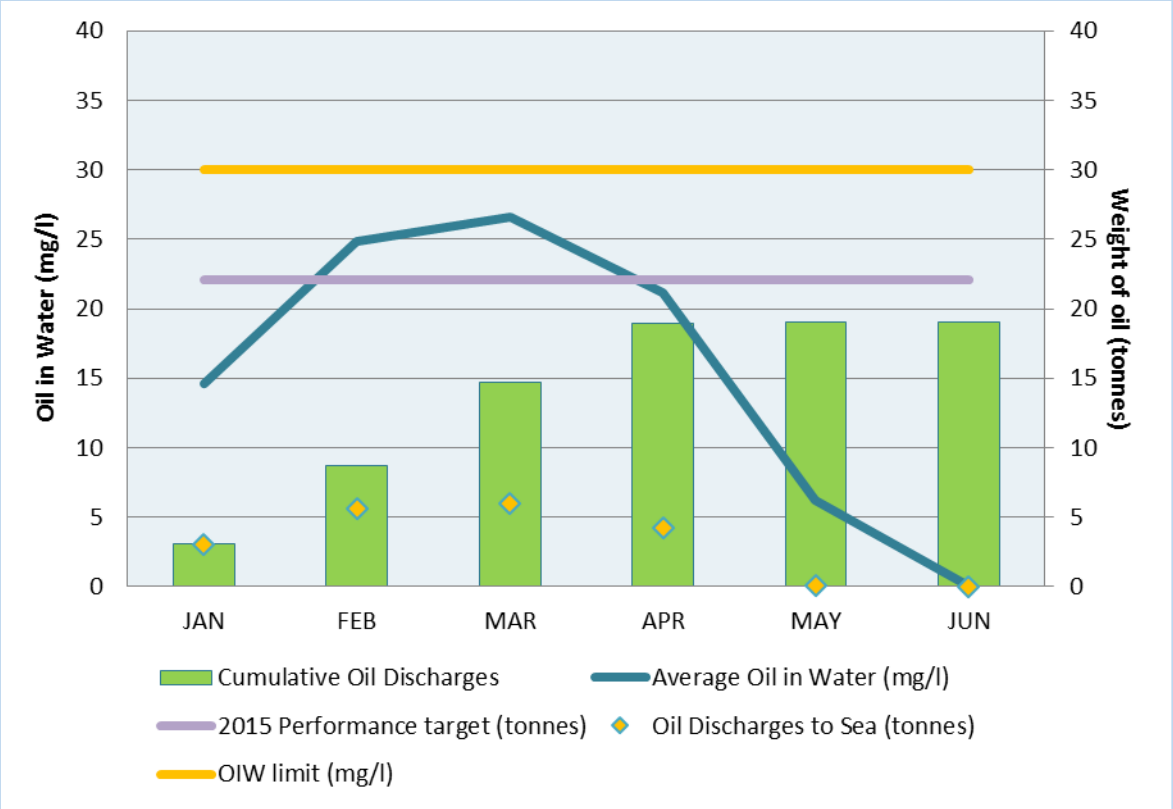

Figure 1 – Total Oil in produced water and mass of oil dischaged to sea from the NSP FPSO in 2015 against the performace target.

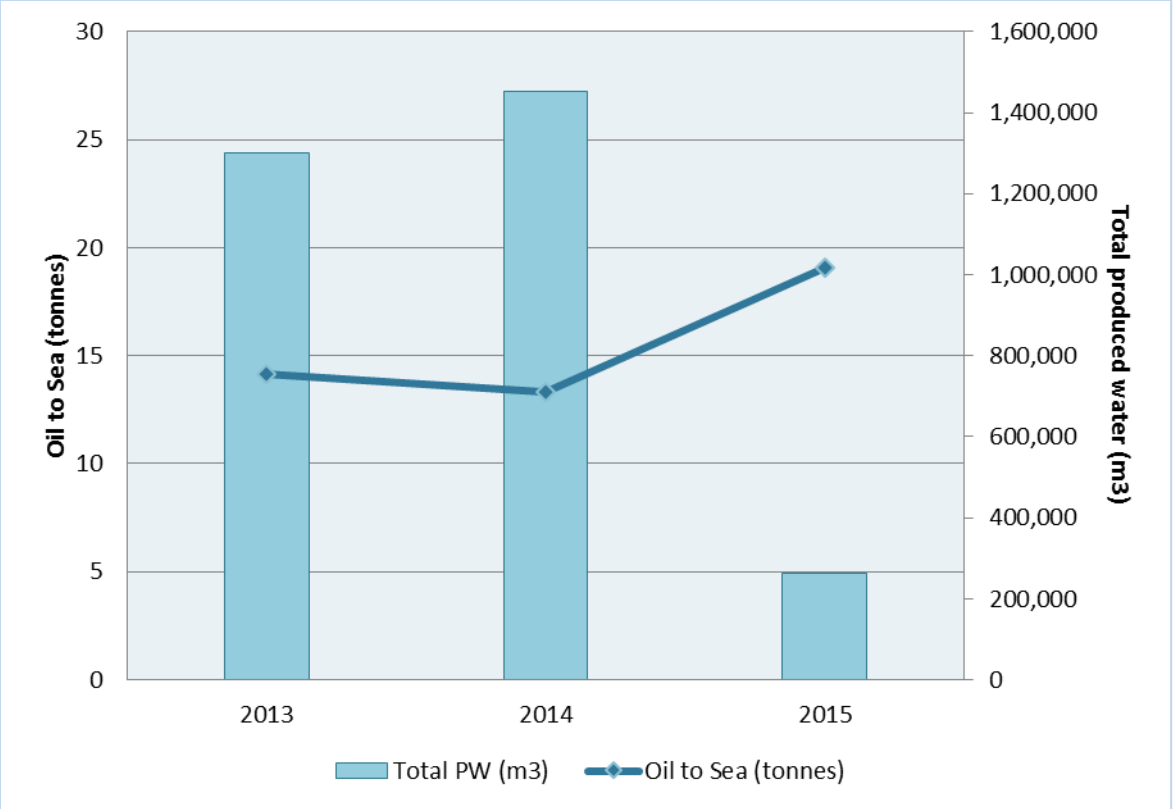

Figure 2 - Annual comparison of total oil to sea and produced water discharges for the last three years.

Chemical management

Many chemical products were used onboard the NSP FPSO for cleaning and maintenance purposes, and throughout work processes. They served to improve production processes, for corrosion inhibition, scale formation inhibition and aiding the separation of oil and water.

NSPCL as part of Maersk FPSOs has a unique and strong focus on the safe use of chemicals. Our chemical management system is a key element of our approach and the offshore employees are regularly trained in safe handling of chemicals and correct use of the system. We perform chemical inspections as part of our chemical audit programme.

The use and discharge of chemicals at NSP operations are governed by the Offshore Chemicals Regulations 2002 (as amended) (OCR). In 2015, 49.33 tonnes of offshore chemicals were utilised for production, 16% of which were discharged to sea in line with the NSP's OCR permit. There were no non-conformances during 2015.

Classification and risk ranking of chemicals is undertaken under the Offshore Chemical Notification Scheme (OCNS). This scheme assigns a substance a risk/hazard category, using the Chemical Hazard and Risk Management (CHARM) model, based on the varying levels of hazard/risk and assigns a colour bands to the products, Gold (lowest hazard quotient) to Purple (highest hazard quotient). Other products not applicable to the CHARM model (i.e. inorganic substances, hydraulic fluids or chemicals used only in pipelines) are assigned an OCNS grouping, A - E.

Chemical Ranking	Total Use (kg)	Total Discharge (kg)
D	3,586	3,586
E	19,647	0
Gold	26,093	4,240
Total	**49,326**	**7,825**
	Proportion Discharge	**16%**

Table 1 Chemical usage and discharge from the NSP FPSO during 2015 according to Offshore Chemical Notification Scheme (OCNS) Categories

It should be noted that, most of the chemicals used and discharged during 2015 were at the lowest risk, being CHARM (Gold) and non-CHARM chemical categories (E) (*Table 1*).

The NSP FPSO in 2015 utilised two chemicals that carry substitution warning, a corrosion inhibitor and a cleaning detergent. A total of 9,586 tonnes of these chemicals was used and 3,505 tonnes were discharged during 2015. Offshore field trials were undertaken during 2013 and 2014 to replace this chemical. Trials that were carried out in 2013 were unsuccessful. In 2014 successful topside trials of corrosion inhibitor RX-2099 as a suitable replacement for RX-2037 were completed. Corrosion inhibitor RX-2099 was due to replace RX-2037 in February 2015, when the existing stocks of RX-2037 had been utilised. However, due to confirmed permission to remove the North Sea Producer from the MacCulloch field in 2015, a decision was made to continue to use RX-2037 with approval from DECC. The cleaning chemical stocks on board the North Sea Producer were used until the FPSO departed the field.

Hydrocarbon and Chemical Spills to Sea

All unplanned releases of chemicals or hydrocarbons to sea must be notified to DECC via the UK Oil Portal PON1 system. NSP have robust procedures for investigating and reporting spills no matter what the size.

On 5th March 2015, a PON1 Notification of a release of approximately 0.0001 tonnes of crude oil in produced water was made; the uncontrolled release was due to an overflow of produced water from residual tank onto marine deck and subsequently overboard. Another PON1 notification was submitted on 14th April 2015; the crude oil layer from the slops, and residue tanks overflowed through a faulty butterworth hatch seal and onto the marine deck and overboard. This occurred due to starboard slops overboard route (the approved route) manual valve not being fully opened. No one was hurt during these incidents. Investigations were completed to determine the causes of the incidents.

Air emissions

Atmospheric emissions from our offshore activities arose mostly from power generation and flaring of associated gas, which is an integral part of the FPSO safety procedure.

The main composition of these emissions is carbon dioxide (CO_2) with proportionately smaller emissions produced from nitrogen oxide (NO_x), nitrous oxide (N_2O), sulphur dioxide (SO_2), carbon monoxide (CO), methane (CH_4) and volatile organic compounds (VOCs).

CO_2 Emissions

In response to the Kyoto Protocol and in an attempt to lower carbon emissions throughout the EU, the Greenhouse Gas Emissions Trading Scheme 2005 has implemented a cap on the amount of CO_2 any given industry can emit on an annual basis. The annual free allocation granted to the NSP FPSO for 2015 was 49,648 tonnes of CO_2. Any emissions above this would require the purchase of carbon credits.

The 2015 CO_2 emissions totalled 27,231 tonnes (Figure 3 below); this data is still to be verified. These emissions were from the combustion of diesel imported to site and natural gas produced on site (Figure 3). A proportion of gas that could not be otherwise utilised or exported had to be flared to maintain a safe environment on the NSP FPSO.

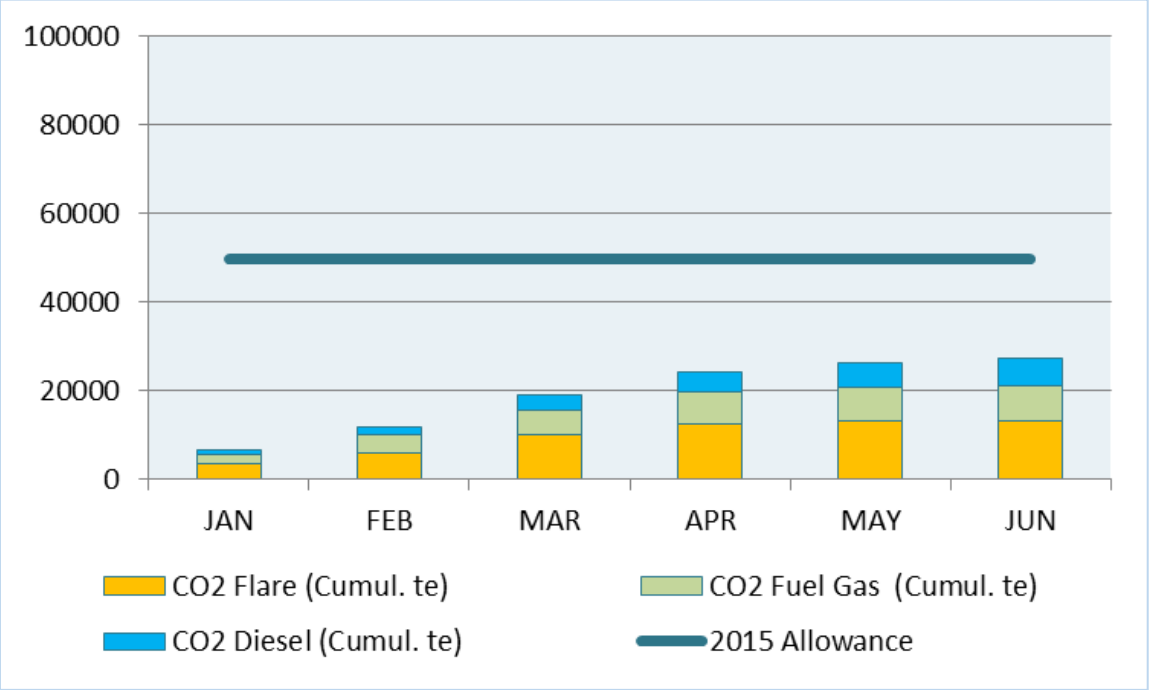

Figure 3 – Cumulative CO_2 emissions by fuel type (as proportion of 49,648 tonnes emitted), NSP, 2015.

Flaring

For 2015 the *Consent to Flare Gas* issued by DECC required that the daily average flare rate did not exceed 34.00 tonnes, an increase on previous years.

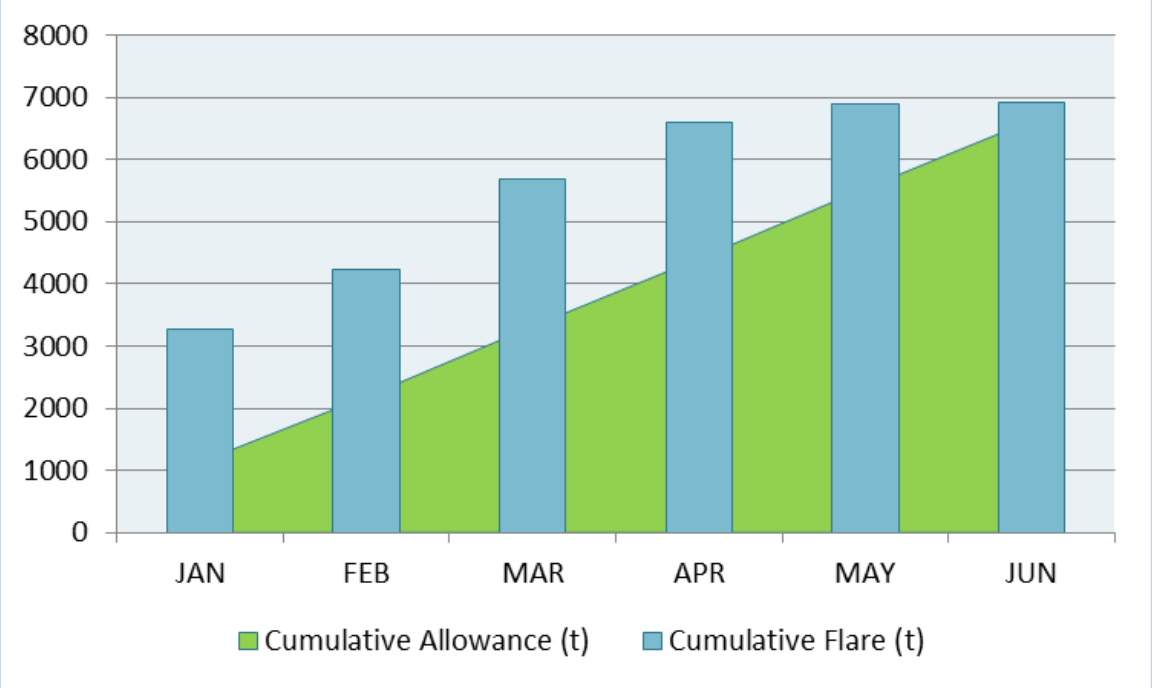

Figure 4 - Cumulative Flared Gas Mass (tonnes) for NSP, 2015.

Waste Generation and Disposal

NSPCL uses a well-established waste management hierarchy of maximising the reduction, reuse, recycle and recover of waste, before its disposal. The amount of waste sent to landfill must be therefore lowered in order to reduce overall environmental impacts.

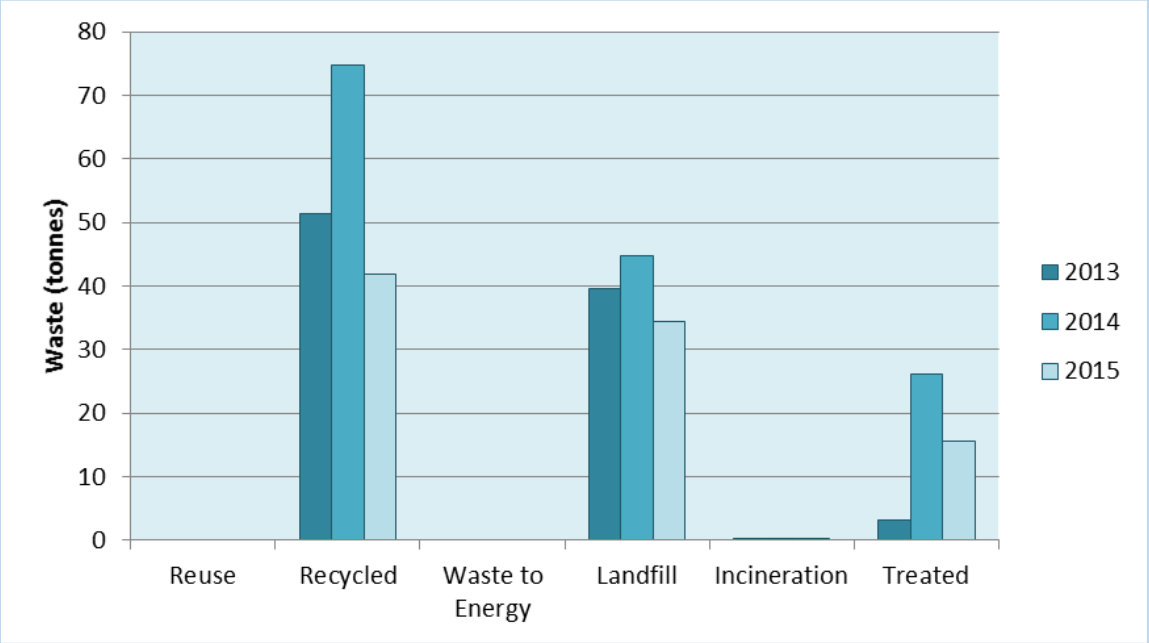

Figure 5 - Yearly comparison of waste quantities (tonnes) by disposal method for NSP, 2013-2015.

Figure 5 compares the quantities of waste disposed of by different methods from 2013 to 2015. Overall in 2015, 45% of waste was recycled and 37% went to landfill. There was an increase of waste sent to landfill of 4% compared to the previous year.

Waste recycling is implemented as part of our waste management plan also in our onshore base in Aberdeen. The total recycled waste for 2015 is 51% with the 49% being landfilled. General waste has generated 0.00652 KWh of electricity in 2015.

Environmental Performance 2015

A number of objectives and targets are set each year to achieve and demonstrate continual improvement in the environmental performance of the NSP FPSO.

Due to the announced cessation of production from the MacCulloch field for May 2015, no new goals were set up for 2015. The main focus during flushing, cleaning and disconnection operations on the NSP FPSO was on compliance with existing limits and environmental permits.