



# EMS Annual Performance Report

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North Sea Operations

2022

*Apache*



# Apache in North Sea

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## Global Team

Our global team is brought together by a sense of ownership and the knowledge that the best answers win.



## Our Purpose

To meet growing demand for energy and to do so in a cleaner, more sustainable way.

## Our Vision

To contribute to human progress by responsibly helping meet the world's oil and gas needs.



## Our Portfolio

Apache Corporation's subsidiaries have operations in the U.S., Egypt, U.K. North Sea and offshore Suriname.



# EH&S Policy Statement



## Apache North Sea Environmental, Health and Safety Policy

Apache is committed to conducting our business in a manner that protects the health, safety, security and wellbeing of our employees, contractors and the general public while maintaining the quality of the environment in which we operate.

With management commitment and employee personal responsibility, Apache pledges to:

- ✓ Recognise that no business objective is so important that it will be pursued at the expense of the environment or compromise health, safety or security considerations
- ✓ Design and manage our activities to actively prevent environmental and health impacts, optimise energy consumption and provide adequate control of the health, safety and security risks arising from our work activities
- ✓ Comply with all Company operating standards, policies and behaviours which are based on applicable environmental, health, safety and security laws, regulations and best practices for our operations
- ✓ Ensure availability of information and necessary resources to achieve the health, safety, security and environmental objectives and targets
- ✓ Continually measure, audit and assess Apache's health, safety, security and environmental performance and energy consumption against challenging key performance indicators and actively seek to identify improvement opportunities
- ✓ Continuously improve the use of energy resources throughout the operational life cycle, with the purpose of preserving natural resources and reducing atmospheric emissions
- ✓ Manage health, safety, security and environmental risks through appropriate contingency planning, emergency preparedness, response and recovery programs
- ✓ Empower all employees or persons working with us to challenge any activity or condition and to stop the job where, in their opinion it may cause a harmful effect to their own health, safety or security, or to the environment
- ✓ Promote a high standard of health and wellbeing for all employees and encourage open internal and external communications on health, safety, security and environmental matters amongst all stakeholders.

Apache will actively realise the goals of this statement through the commitments and actions of all employees and associated contractors.

We trust you will lead by example.



Jeff Yates

Vice President, Offshore Production Operations  
Apache North Sea Limited

## Taking our environmental responsibility seriously

We have continued to advance our performance in a range of environmental focus areas as atmospheric emissions, produced water management and chemical utilisation such as:

- Efficient management of process resulted to reduction of plant upsets
- Development of the GHG Emissions Action Reduction Plans (ERAPs)

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# Beryl Asset

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**01**

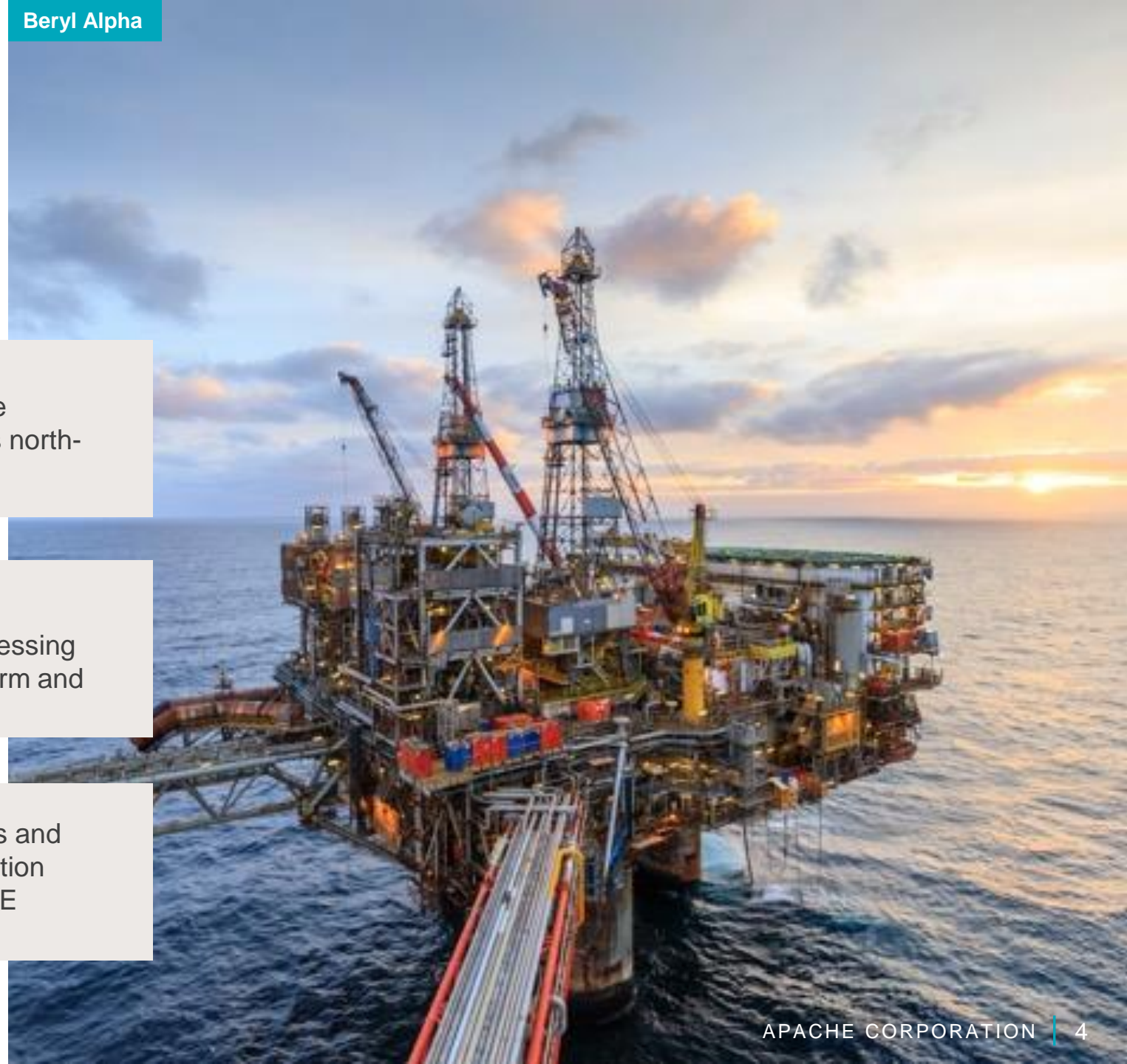
The Beryl Field is located in Block 9/13 of the northern North Sea, approximately 190 miles north-northeast of Aberdeen.

**02**

Beryl Alpha and Beryl Bravo installations are equipped with facilities for drilling wells, processing and exporting fluids and gas from both platform and subsea tie-back wells.

**03**

Oil production is transferred to tanker vessels and gas is exported to Scottish Area Gas Evacuation (SAGE) Gas Plant at St Fergus, via the SAGE pipeline.



# Forties Asset

**01**

The Forties Field is located in Blocks 21/10 and 22/6a of the central North Sea, approximately 140 nm north-east of Aberdeen.

**02**

Forties Alpha, Bravo, Charlie and Delta platforms are all single steel jacket installations, providing facilities for drilling wells and processing fluids and exporting oil.

**03**

The Bacchus oil subsea and Aviat gas subsea facilities are tied-back to the Forties Alpha platform. Oil production is exported to shore via the Forties Pipeline System (FPS).

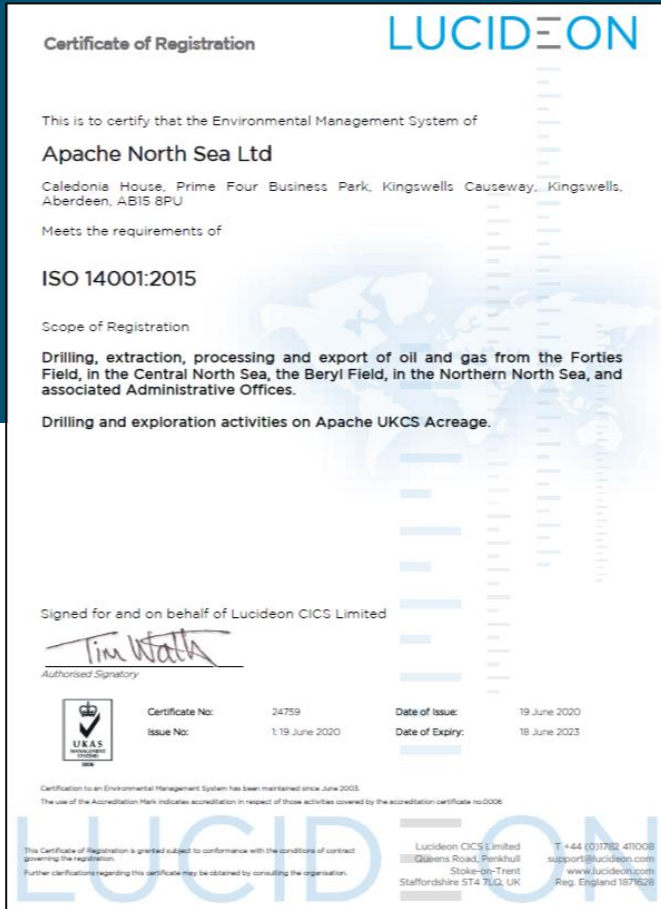
**04**

Forties Bravo and Forties Echo platforms do not produce electricity but import power via the Forties Power Ring Main.





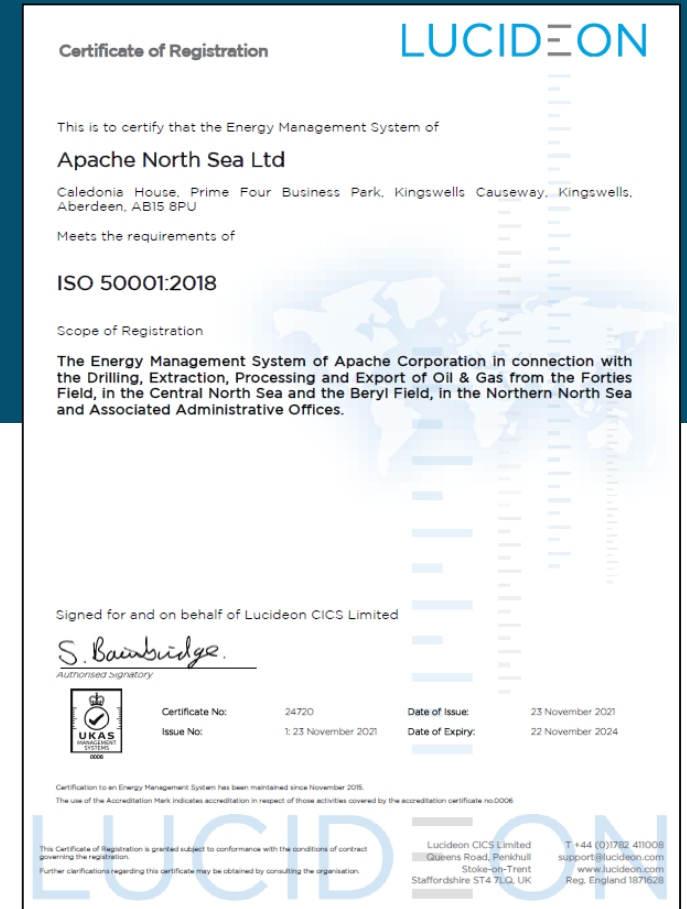
# Management System



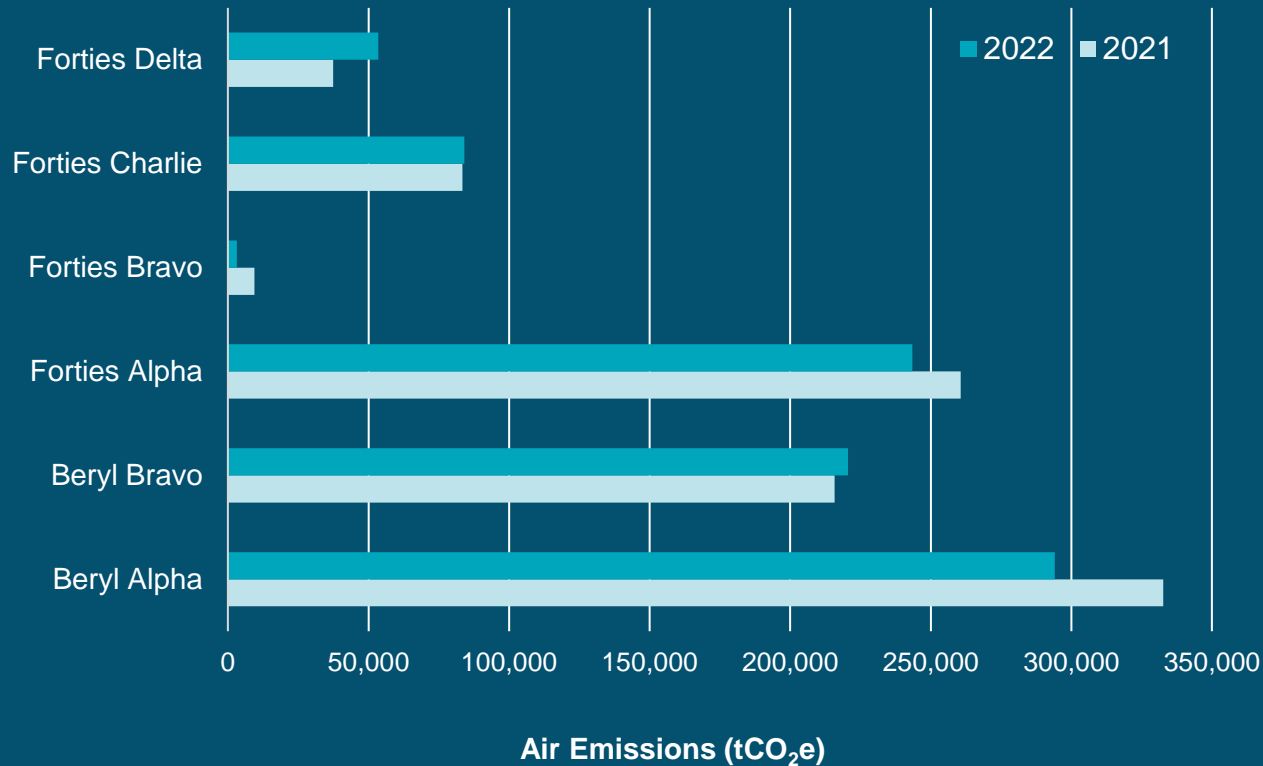
Apache's integrated Environmental and Energy Management Systems (EMS) are certified to the International Standards ISO 14001:2015 and ISO 50001:2018. The EMS is subject to periodic review and assessment, by both internal audit and external third-party audits. The most recent routine audits for the ISO 14001 and recertification ISO 50001 were successfully completed in December 2022.

Corrective actions were raised for the observations and findings identified by the internal and external audits and are being tracked to completion through Apache's action-tracking system.

The re-certification of the ISO 14001 is scheduled in 2023. Further ISO 50001 routine surveillance audit are scheduled for 2023, providing external verification that continual improvements are achieved in environmental, including energy, performance while at the same time enhancing business success.



# Air Emissions



The effect of different greenhouse gases (GHGs) are measured against carbon dioxide equivalent (CO<sub>2</sub>e) which is the most commonly emitted GHG. Under normal operating conditions, atmospheric emissions are a result of the following:

- Flaring, which is an integral part of platform safety
- Gas compression
- Turbines and generators used to supply operational power (fuel gas and diesel)
- Volatile organic compounds (VOCs) emitted during oil loading
- Fugitive emissions, for example from valve seals

01

The majority of GHG emissions were generated from fuel gas consumption (73.9%) to provide electrical power, compression and for oil and gas export.

02

Emissions from the combustion of diesel (5.2%) are generated due to its required use where fuel gas is unavailable.

# Resources Management

## Flaring

An overall 8.8% decrease of flaring was achieved in 2022 versus 2021 due to schedule shut-down operations. Studies are scheduled in 2023 to engineer solutions for flare minimisation.

## Combustion

Apache continue to develop strategies to optimise operational efficiency, ensure maintenance of the plant and further improve energy use. Improving the stability of process from all platforms is a key factor to increase energy efficiency and consequently reduce emissions.



Physical pipework modifications were undertaken in 2022 at the Beryl Asset to divert venting sources to flare which will almost eliminated methane venting.

As a comparison, a typical passenger vehicle emits about 2.2 tCO<sub>2</sub> / year, so this elimination equates to emissions from over 20,000 cars.

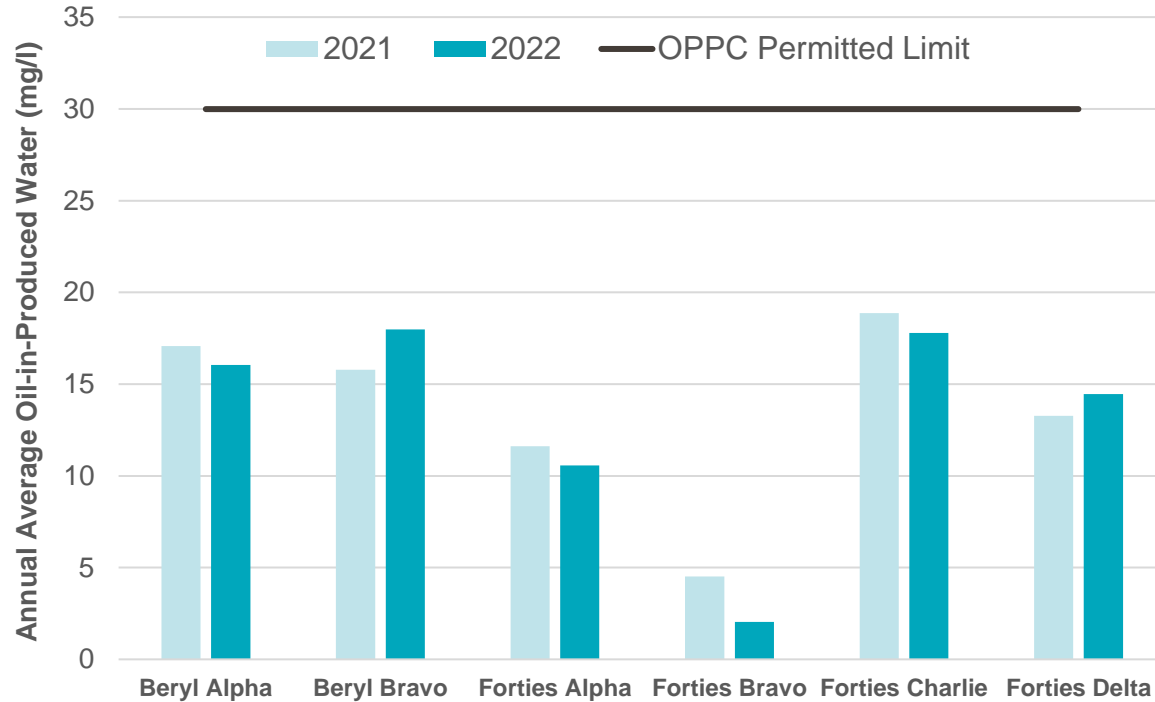
2022	Flaring (in tonnes)	Venting (in tonnes)	Fuel Gas Usage (in tonnes)	Diesel Usage (in tonnes)
Beryl Alpha	10,311	863	88,110	4,030
Beryl Bravo	6,982	1,243	55,730	5,155
Forties Alpha	9,519	67	77,787	863
Forties Bravo	2,973	-	-	-
Forties Charlie	12,458	74	14,723	1,537
Forties Delta	9,598	67	5,413	2,673

2021	Flaring (in tonnes)	Venting (in tonnes)	Fuel Gas Usage (in tonnes)	Diesel Usage (in tonnes)
Beryl Alpha	18,064	148	97,474	4,715
Beryl Bravo	5,658	767	63,819	2,457
Forties Alpha	12,524	67	77,066	1,199
Forties Bravo	3,011	-	-	-
Forties Charlie	10,660	75	16,831	1,053
Forties Delta	6,919	66	3,603	1,698



# Produced Water Discharges



Amount of Oil Discharged (in tonnes)	2021	2022
Beryl Alpha	28.7	32.6
Beryl Bravo	21.9	24.1
Forties Alpha	72.0	36.9
Forties Bravo	10.7	6.0
Forties Charlie	18.9	17.8
Forties Delta	11.7	14.4

01

All discharging offshore assets operate well below the legislative 30 mg/l limit for oil in produced water concentrations.

02

Approximately a decrease of 20% of oil was discharged into the marine environment in 2022 versus 2021 due to high re-injection rates.



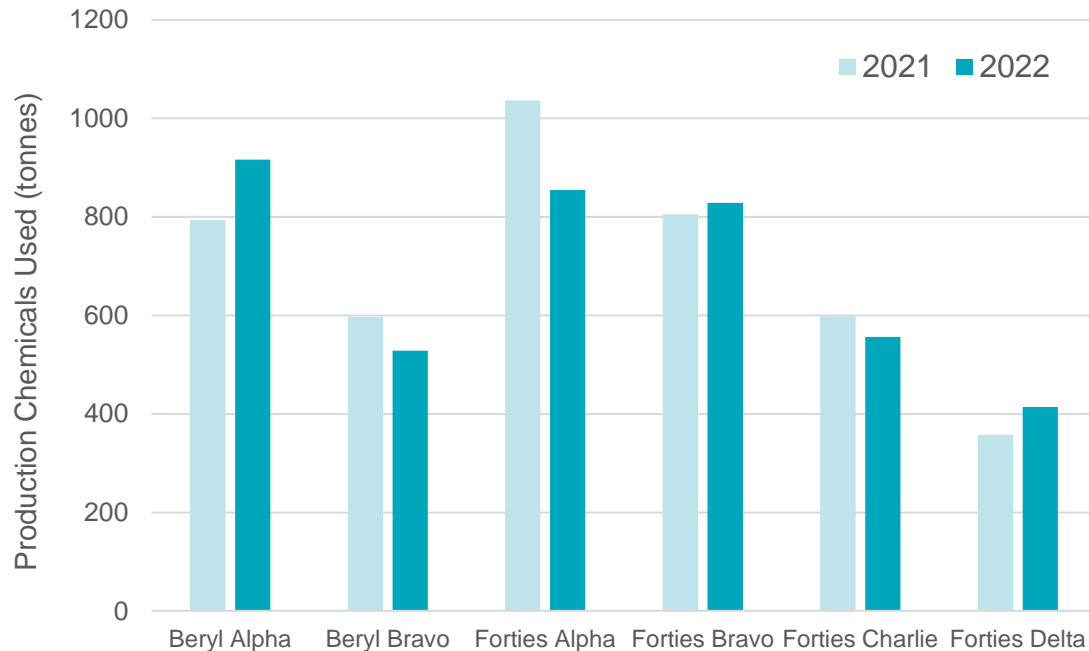
# Releases

The number of reportable spills to sea, increased to 9 from 8 in 2022. In addition, the amount of oil released was decreased by 38% in 2022 versus 2021.

All spill to sea events were reported to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) in line with regulatory requirements. Each event was investigated, with corrective actions identified which are being tracked to completion through Apache's action-tracking system.

	2021	2022
Number of Releases	8	9
Mass of oil released (in tonnes)	0.13	0.08
Mass of chemical released (in tonnes)	1.21	0

# Chemical Discharges



01

## Reduction of Chemicals with Substitution Label

Apache is committed to a programme of removal / reduction of all chemicals carrying a substitution warning, unless their use is required on technical and/or safety grounds.

02

## Offshore Chemical Notification Scheme

The vast majority of chemicals used and discharged during Apache operations, fall within Offshore Chemical Notification Scheme (OCNS) categories “Gold” and “E”, which are least hazardous to the environment.

03

## Continuous Improvement

There was a decrease of 2% in the usage of production chemicals in 2022 versus 2011. Due to the continuous proactive chemical selection activities, the volume of lowest production hazard chemicals remains up to 90% of total.



# Waste Management

Waste Category (in tonnes)	Reuse	Recycling	Waste to Energy	Incineration	Landfill	Discharge Under Consent	Treatment	Total
Beryl Alpha	-	26.4	1.3	-	14.8	-	-	42.5
Beryl Bravo	-	15.3	1.0	0.8	10.9	-	0.4	28.4
Forties Alpha	-	17.1	1.9	0.5	13.6	-	9.9	42.9
Forties Bravo	-	26.2	1.4	-	4.4	-	-	32.0
Forties Charlie	-	17.4	1.0	-	14.3	-	-	32.8
Forties Delta	-	13.4	1.4	0.1	10.0	-	0.7	25.4
Forties Echo	-	0.2	-	-	-	-	-	0.8



## Waste Hierarchy

Waste levels from the assets are directly related to the amount of activity on-site, and the waste produced, ranges from controlled or non-hazardous waste, to hazardous or 'special' waste.



## Non-Landfill Destination

An average of 62% of wastes was sent to a non-landfill destination (i.e. reuse, recycling, waste to energy or incineration) in 2022.

# 2023 Environmental & Sustainability Plan

An annual **Environmental and Sustainability Management Plan** is established, and environmental performance is constantly monitored, as Apache strive towards achieving **continual improvement** in environmental performance, alongside production enhancement.

E



Air

Implementation of the GHG Emissions Reduction Action Plans

Development of Methane Action Plans

S



Communities  
+People

Join the East Grampian Coastal Partnership (EGCP)

G



Governance

Alignment with the United Nations Environment Programme (UNEP) - Oil and Gas Methane Partnership 2.0 (OGMP 2.0) methane reporting framework

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