



Environmental Performance Report 2022

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ALTERA INFRASTRUCTURE ENVIRONMENTAL MANAGEMENT SYSTEM (EMS) ANNUAL PUBLIC STATEMENT

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Abbreviations

BEIS	Department for Business, Energy and Industrial Strategy
CH₄	Methane
CO	Carbon Monoxide
CO₂	Carbon Dioxide
CoP	Cessation of Production
EEMS	Environmental Emissions Monitoring System
EMS	Environmental Management System
FPSO	Floating Production Storage and Offloading
HSSEQ	Health, Safety, Security, Environment and Quality
mg/l	Milligrams per Litre
NO_x	Nitrous Oxides
N₂O	Nitrogen Dioxide
OIW	Oil in Water
OPPC	Oil Pollution Prevention and Control
OSPAR	Oslo Paris Convention for the Protection of the Marine Environment of the North-East Atlantic
PLANC	Permits, Licences, Authorisation, Notifications and Consents
PON	Petroleum Operations Notice
PPC	Pollution Prevention and Control
PWRI	Produced Water Re-injection
SO₂	Sulphur Dioxide
SUB	Chemicals Rated for Substitution
UK	United Kingdom
UKCS	United Kingdom Continental Shelf
VOCs	Volatile Organic Compounds

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1 INTRODUCTION

This report is the 2022 Annual Public Statement for environmental management covering the United Kingdom Continental Shelf (UKCS) operations of Altera Infrastructure.

This document is prepared in line with the reporting requirements of the United Kingdom (UK) Department for Business, Energy and Industrial Strategy (BEIS) and meets the requirements of the Oslo Paris (OSPAR) Convention recommendations 2003/5. This report outlines Altera Infrastructure Offshore Environmental Management System (EMS) and details the 2022 environmental performance.

2 OVERVIEW OF NORTH SEA ASSETS

Petrojarl Foinaven

The Petrojarl Foinaven Floating Production System (FPSO) was the host installation of the Foinaven Field producing for BP. The Petrojarl Foinaven FPSO (Figure 2-1) was located 190 km west of the Shetland Islands, predominantly in Blocks 204/24a and 204/19, in a water depth of 480 m.

The asset ceased production in 2021 and left station in 2022.



Figure 2-1 Petrojarl Foinaven FPSO

Sevan Hummingbird

The Sevan Hummingbird is a SEVAN 300 unit and was located in the Chestnut field, producing for Spirit Energy (Figure 2-2).

Discovered in 1986, the Chestnut oilfield was one of the oldest standalone oilfield developments in the North Sea. Production came online in September 2008, and in the first quarter of 2009, the Chestnut satellite field was tied into the newly installed Hummingbird FPSO. The Hummingbird is a cylindrical geo-stationary FPSO, the first of its kind to be utilised in the North Sea, designed around a hexagonal shaft with a cargo storage capacity of 300,000 barrels. The FPSO's topside provided accommodation for 47 crew members. Tanks for diesel and fresh water and utility equipment were situated beneath the accommodation. Seawater was injected to maintain reservoir pressure, and produced fluids are received from two risers before fluids were separated and produced water treated and discharged directly into the sea. Oil was routed to Cargo tanks and periodically offloaded via shuttle tanker.

The Sevan Hummingbird ceased producing and left its station in 2022.



Figure 2-2 Sevan Hummingbird FPSO

3 ENVIRONMENTAL MANAGEMENT SYSTEM

3.1 HSSEQ Policy

Altera Infrastructure's commitment to the environment, as well as health, safety and security, are detailed within its policy statement, shown in Figure 3-1. The Health, Safety, Security, Environment and Quality (HSSEQ) policy is a public commitment to conducting business in a manner that protects the health and safety of people and preserves the integrity of the environment.

The main commitments of the policy are:

- Providing a safe working environment with no harm to personnel;
- Achieving our goal of zero incidents with major accident potential;
- Preventing spills and minimising our environmental footprint; and
- Meeting or exceeding all applicable HSSEQ legislation and regulatory requirements.

3.2 EMS

Altera Infrastructure's commitment to the highest levels of HSSE is achieved through the HSSEQ Management System, which contains an EMS utilised to identify, assess and mitigate environmental risks and manage environmental performance of all its operations.

The EMS is an integral element of the HSSEQ Management System and is based on the principle, "plan, do, check and act". The EMS is designed to achieve the environmental goals of the prevention and elimination of pollution from offshore sources, the protection and conservation of the maritime area against other adverse effects of offshore activities and the continual improvement in environmental performance. Altera Infrastructure produces an annual Sustainability Report which includes the status of its environmental performance.

The EMS is verified against the International Organization for Standardization (ISO) 14001 Standard for EMS and includes all their North Sea assets. Altera Infrastructure ensures maintenance and compliance with ISO 14001 (Figure 3-2). Environmental compliance is also managed through the development of an asset specific Permits, Licences, Authorisations, Notifications and Consents (PLANC) Register and an Environmental Compliance Plan.



Global HSSEQ Policy

Our commitments to Health, Safety, Security, Environment, and Quality (“HSSEQ”) are directly linked to the long-term success of Altera Infrastructure. It is our vision to lead the offshore energy industry to a sustainable future and our policy is to incorporate a strong risk and opportunity-based approach to HSSEQ in our strategic and daily decisions.

We are committed to:

- Providing a safe and healthy working environment with no harm to personnel
- Achieving our goal of zero incidents with major accident potential
- Protecting the environment by preventing pollution
- Minimizing our environmental footprint
- Delivering operational excellence every day by living our TEAM values
- Meeting or exceeding all applicable HSSEQ legislation and regulatory requirements

To meet our commitments, we:

- Ensure HSSEQ is a line responsibility
- Systematically manage health, safety, security, and environmental risks through elimination of hazards
- Actively engage with our employees and their representatives
- Continuously improve our processes and performance
- Prioritize our HSSEQ commitments in strategic and daily decisions
- Empower everyone to stop work where safety is at risk
- Manage hazards to prevent major accidents
- Engage in the innovation of environmentally friendly technology
- Promote ethical and compliant decision-making
- Only engage with business partners and suppliers who share our approach to HSSEQ

INGVILD SÆTHER
President & Chief Executive Officer
Altera Infrastructure Group Ltd.

June 2021

If there are discrepancies between the English version of this Policy and any translated version, the English version will prevail.

Figure 3-1 Altera Infrastructure HSSEQ Policy



MANAGEMENT SYSTEM CERTIFICATE

Certificate no.:
 174267-2015-AE-NOR-NA

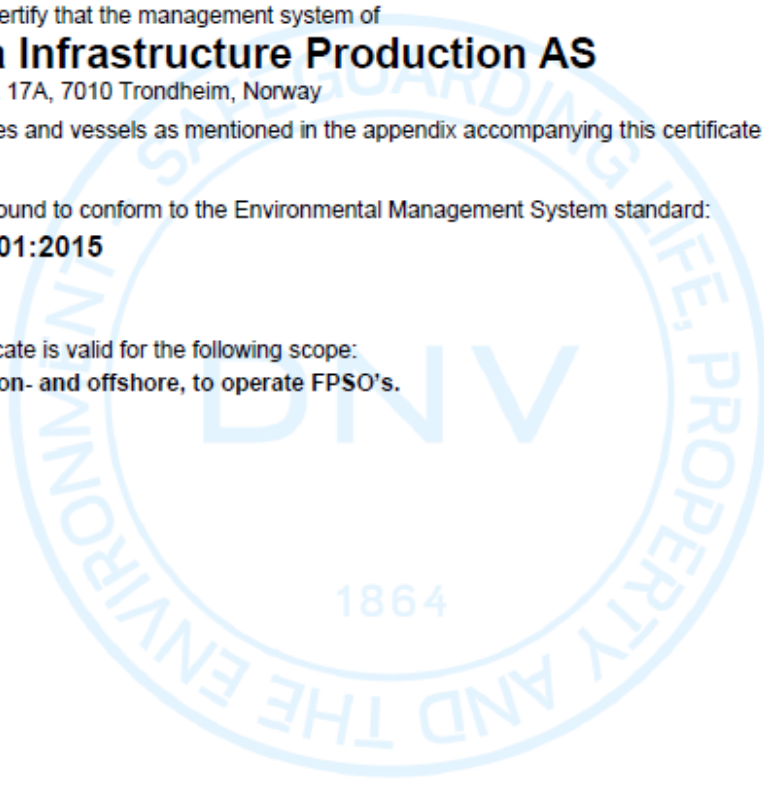
Initial certification date:
 26 December 2004

Valid:
 14 March 2021 – 13 March 2024

This is to certify that the management system of
Altera Infrastructure Production AS
 Brattørkaia 17A, 7010 Trondheim, Norway
 and the sites and vessels as mentioned in the appendix accompanying this certificate

has been found to conform to the Environmental Management System standard:
ISO 14001:2015

This certificate is valid for the following scope:
Activities on- and offshore, to operate FPSO's.



Place and date:
 Høvik, 10 March 2021



For the issuing office:
 DNV - Business Assurance
 Vertisveien 1, 1383 Høvik, Norway

Jøran Laukholt
 Management Representative

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.
 ACCREDITED UNIT: DNV Business Assurance Norway AS, Vertisveien 1, 1363 Høvik, Norway - TEL: +47 67 57 99 00. www.dnvgl.com/assurance

Figure 3-2 Altera Infrastructure ISO14001 certificate

4 ENVIRONMENTAL PERFORMANCE

Altera Infrastructure identified the following significant environmental aspects of its operations:

- Atmospheric emissions;
- Oil and sand discharges to sea in produced water;
- Chemical use and discharge to sea;
- Solid waste generation and disposal; and
- Oil and chemical spills.

Altera Infrastructure routinely monitored and reported its performance in terms of environmental emissions and discharges as required by UK legislation and the internal HSSEQ Management System. This information was reported via the Environmental and Emissions Monitoring System (EEMS), which is a database of environmental information that is accessible to oil and gas operators and to the regulator, BEIS.

4.1 Petrojarl Foinaven

Environmental data for the Petrojarl Foinaven FPSO is presented for the period up to the asset leaving its station in mid-2022.

4.1.1 Water and Oil in Water Discharges

Water discharges were monitored and reported in accordance with the Oil Pollution Prevention and Control (OPPC) Permit.

As the asset was not producing in 2022, no discharges took place. Thus, the average reported Oil in Water (OIW) concentration for the main discharge route (Produced Water Flash Drum) was 0 mg/l. A produced water volume of 0 m³, and 0 kg of oil, was discharged during the year (Figure 4-1).

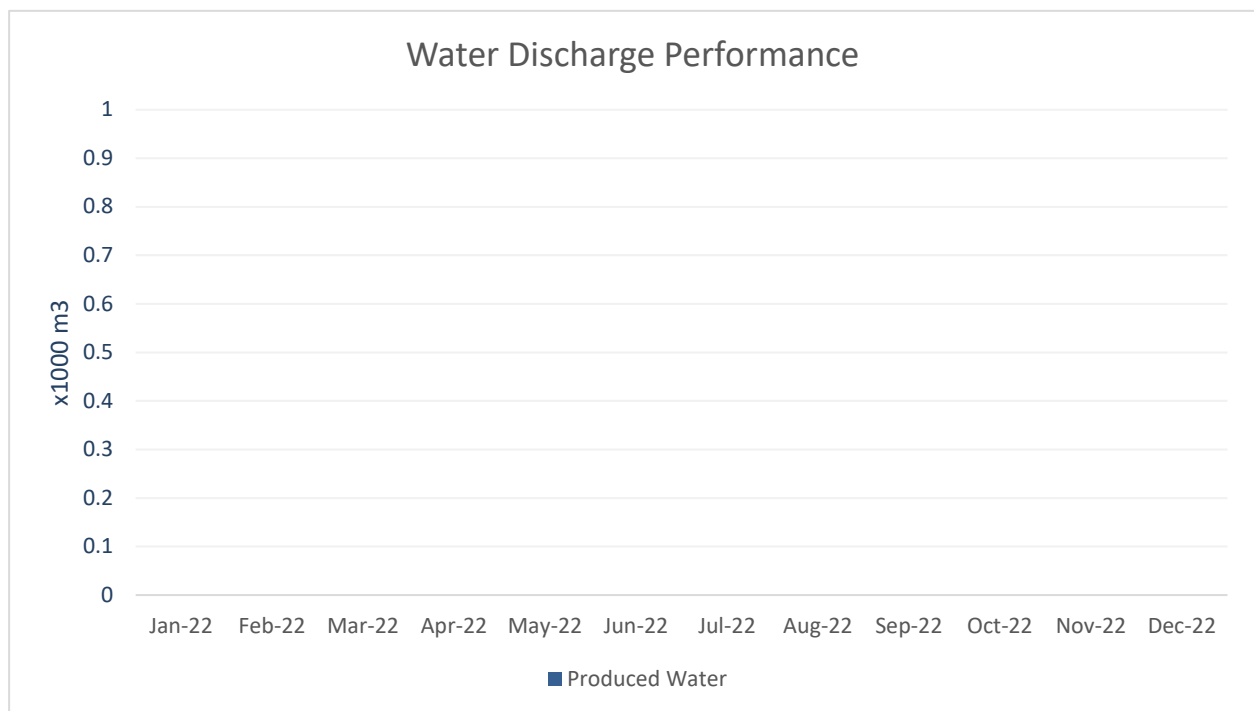


Figure 4-1 Petrojarl Foinaven Water Discharge Performance

4.1.2 Chemical Use and Discharge

The data shows that chemical use in 2022 was 24.5 tonnes and the percentage of these chemicals that may have been discharged was 52%. All individual chemical usages/discharges were within approved limits (Figure 4-2)

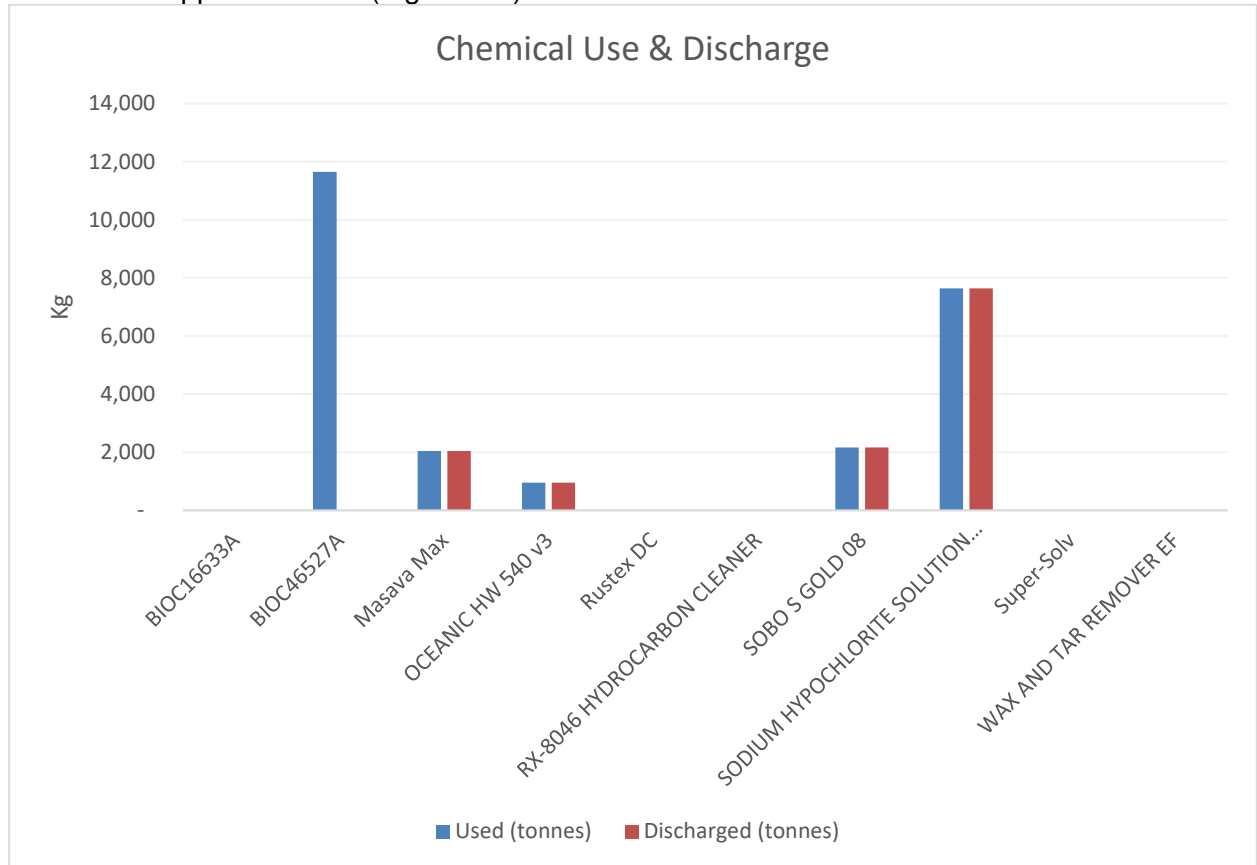


Figure 4-2 Petrojarl Foinaven Chemical Use and Discharge

The majority of chemicals in use on the Petrojarl Foinaven FPSO did not have a substitution (SUB) warning (see Figure 4-3).

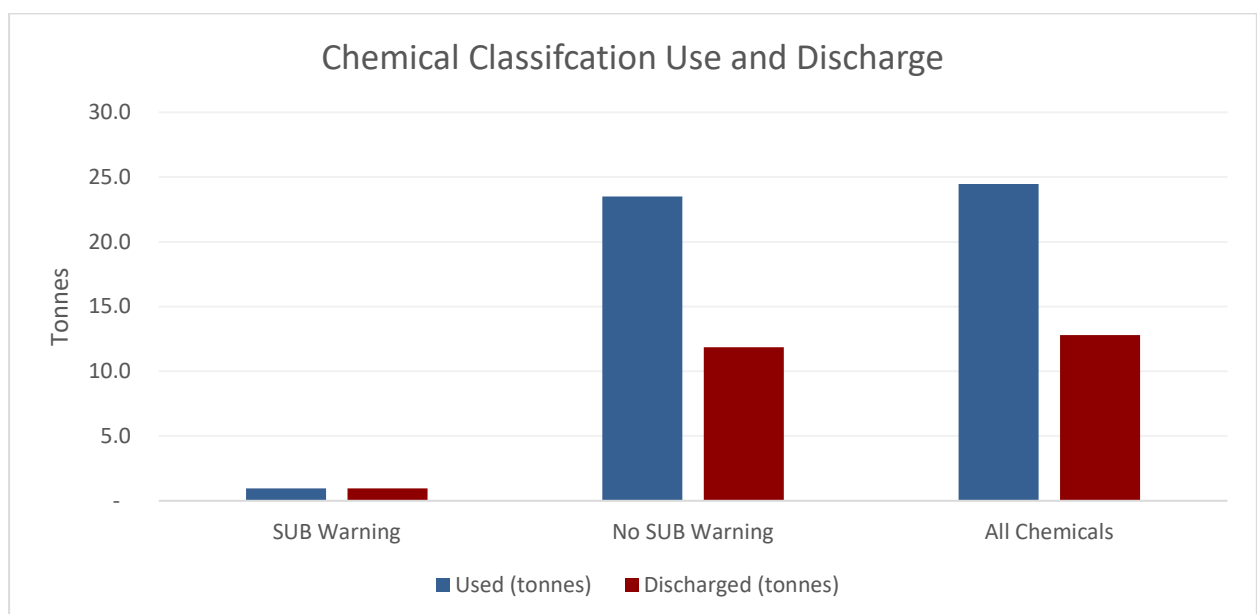


Figure 4-3 Petrojarl Foinaven Chemical Use and Discharge - Chemicals with Substitution Warning Label

4.1.3 Atmospheric Emissions

The primary source of carbon dioxide (CO₂) emissions from Petrojarl Foinaven FPSO in 2022 was diesel, which supplied power generation (Figure 4-4). Note the field operator, BP, is responsible for managing the flare consent and EU ETS permit associated with the Foinaven fields, though flaring for 2022 was zero.

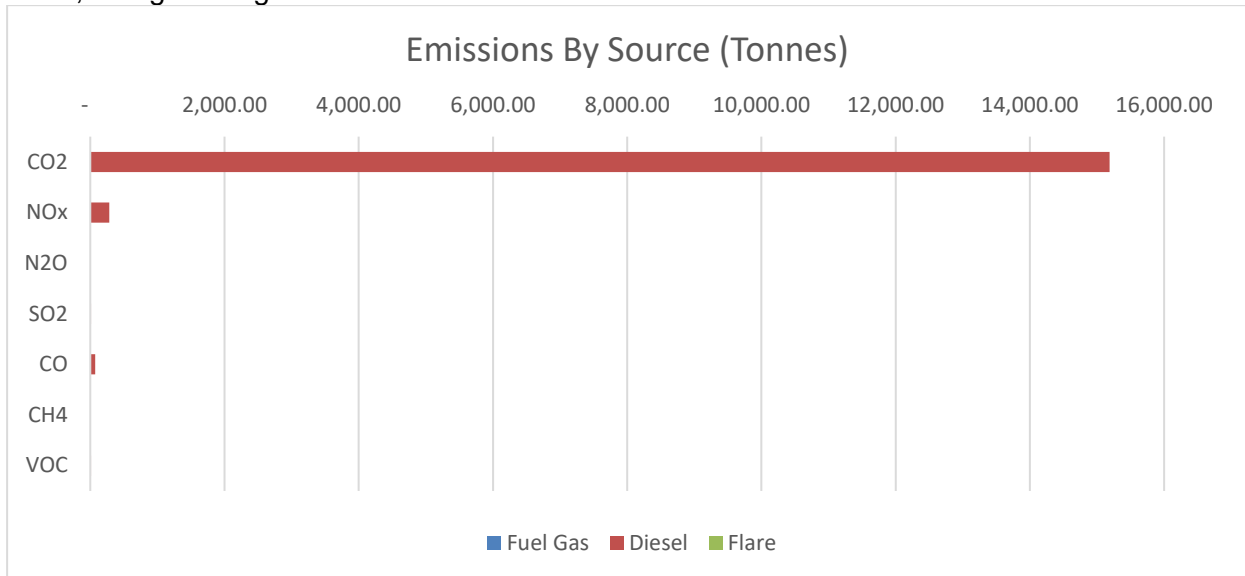


Figure 4-4 Petrojarl Foinaven Emissions

4.1.4 Waste Management

The Petrojarl Foinaven FPSO generated 236.35 tonnes of waste which was segregated into the following disposal routes (Figure 4-5).

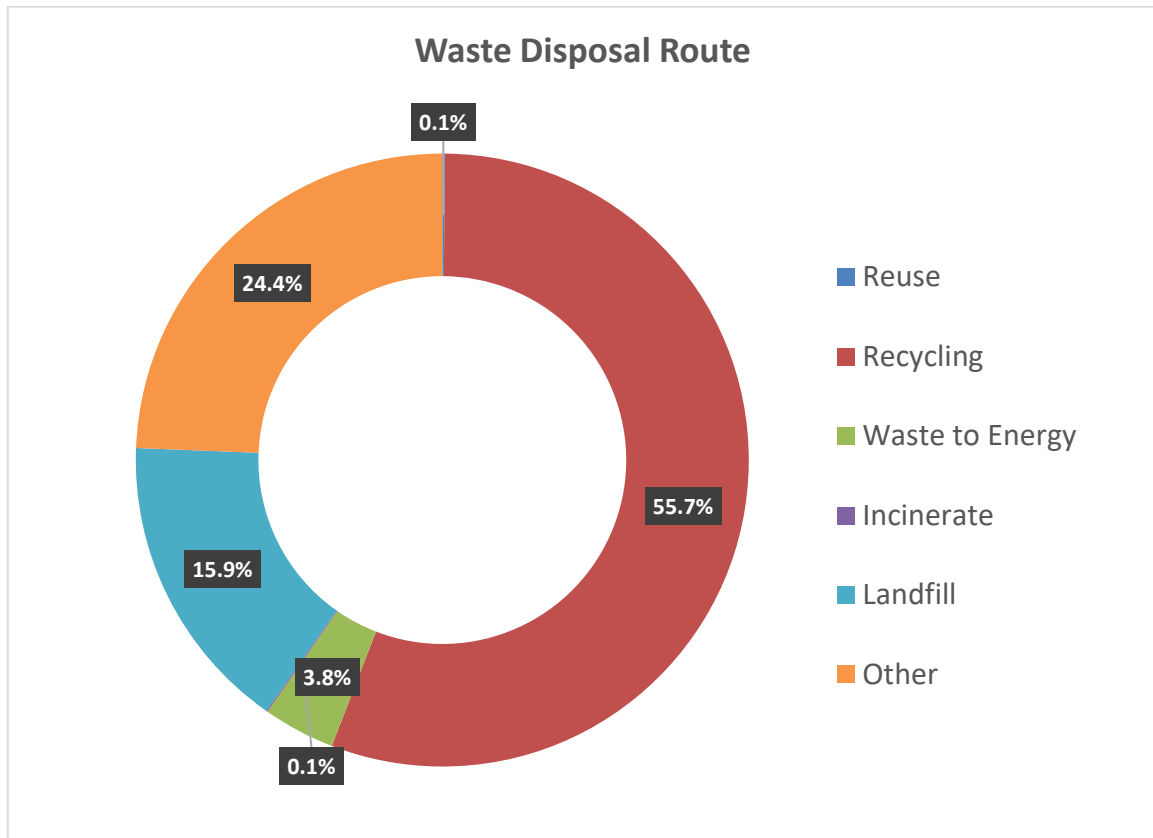


Figure 4-5 Petrojarl Foinaven Waste Disposal Route Breakdown

4.2 Sevan Hummingbird

Environmental data for Sevan Hummingbird is presented for the entire period within 2022 that the asset was at station.

4.2.1 Water and Oil in Water Discharges

Water discharges were monitored and reported in accordance with the OPPC Permit.

The average OIW concentration for the period was 28.15 mg/l, which is below the permitted 30 mg/l limit. A produced water volume of 86,781.2 m³ and 2.44 tonnes of oil was discharged during the year (Figure 4-6).

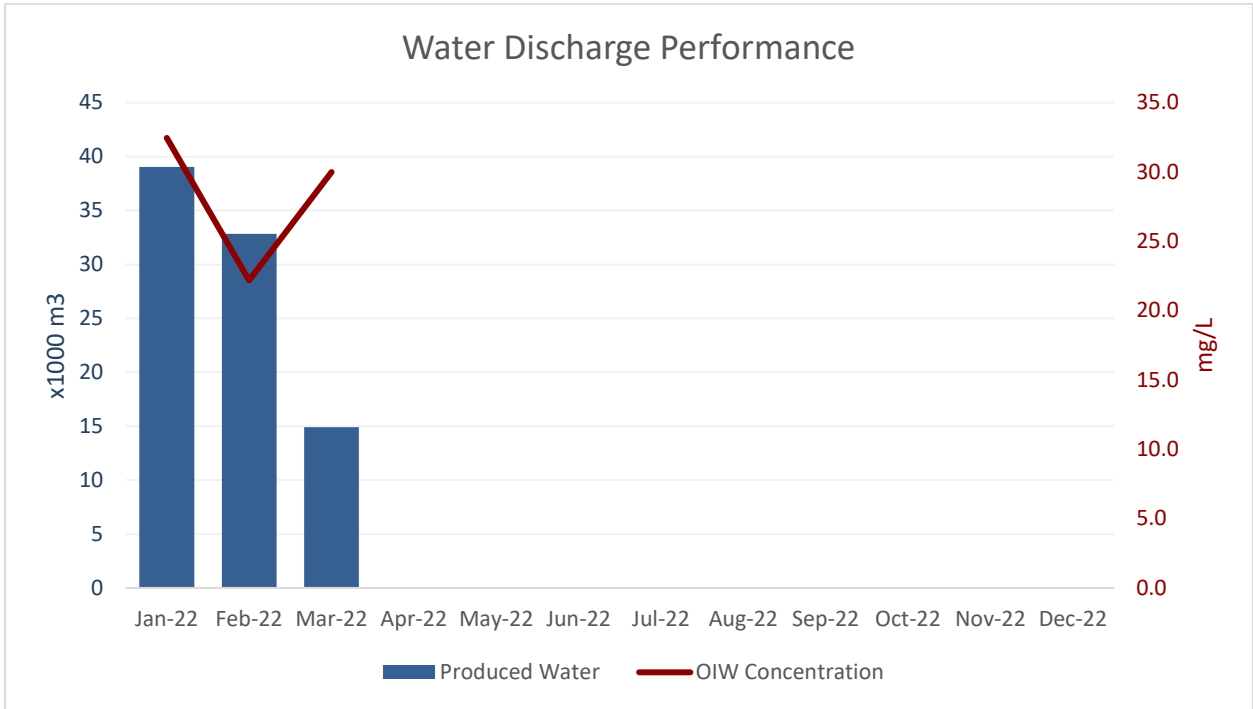


Figure 4-6 Sevan Hummingbird Water Discharge Performance

4.2.2 Chemical Use and Discharge

The data shows that chemical use in 2022 was 39.96 tonnes and the percentage of these chemicals that may have been discharged was 100 % (Figure 4-7). All individual chemical usages/discharges were within approved limits

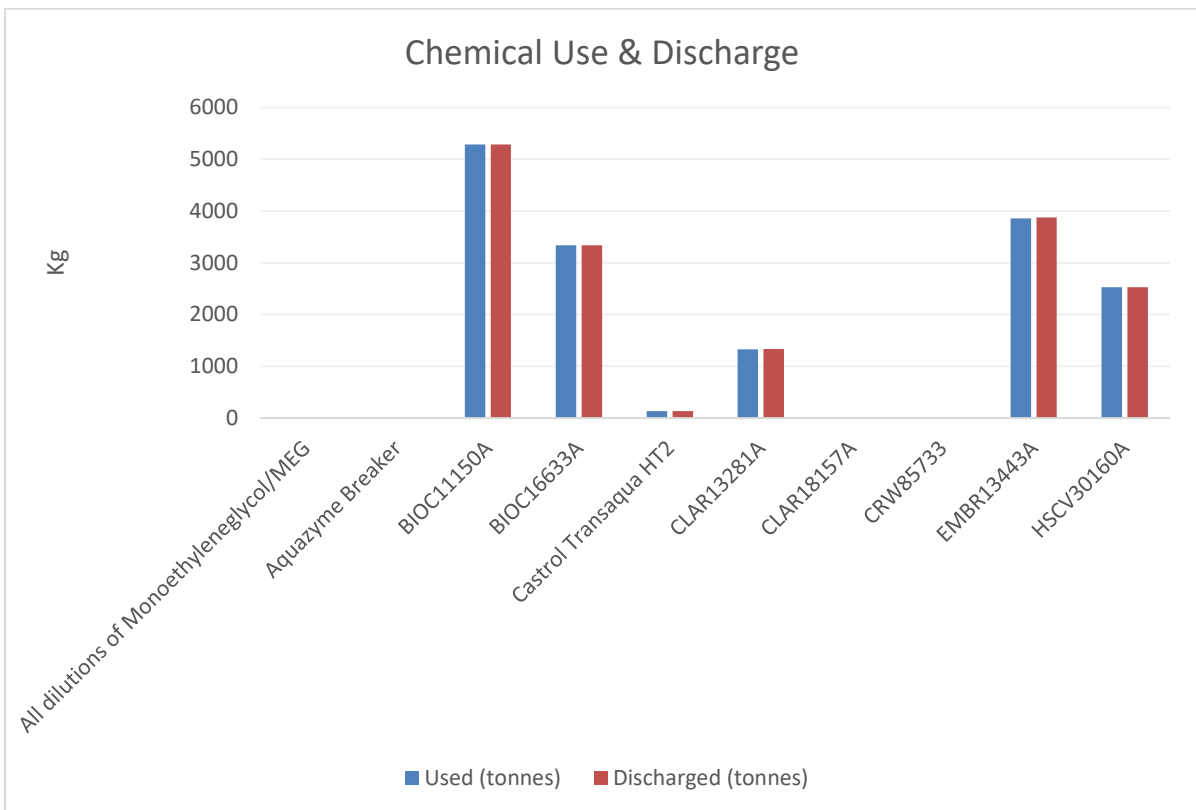


Figure 4-7 Sevan Hummingbird Chemical Use and Discharge

The majority of chemicals in use on the Sevan Hummingbird FPSO had a substitution warning (Figure 4-8).

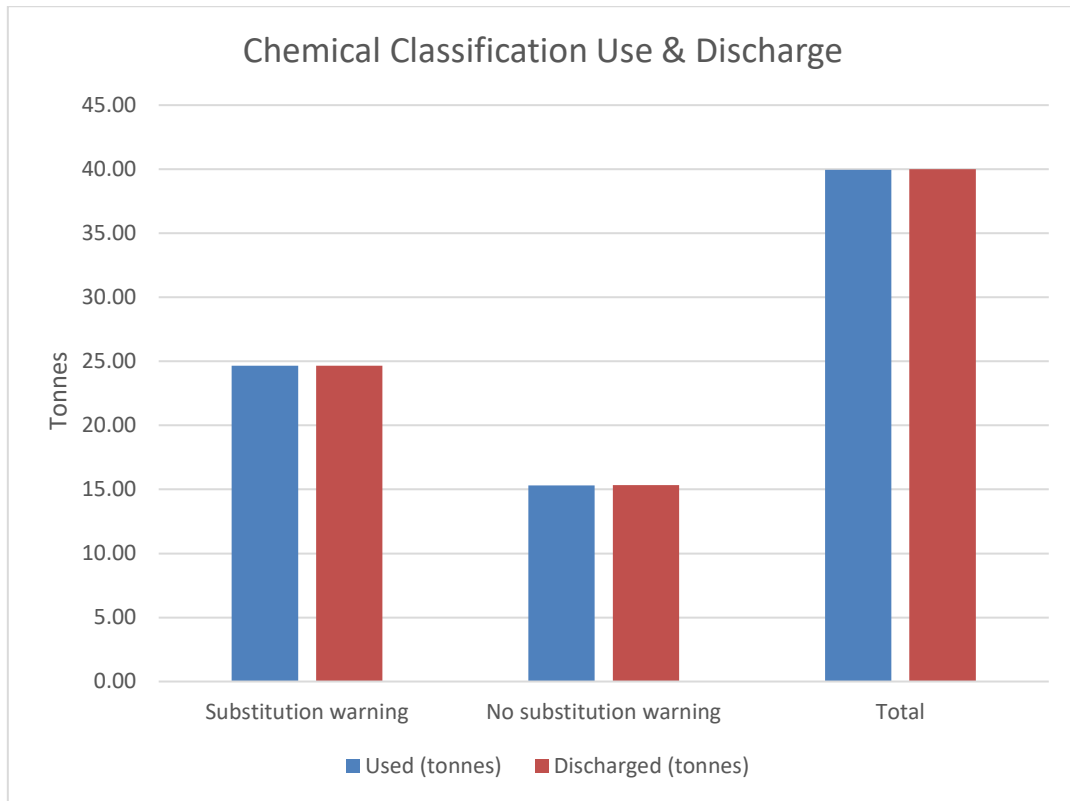


Figure 4-8 Sevan Hummingbird Chemical Use and Discharge - Chemicals with Substitution Warning Label

4.2.3 Atmospheric Emissions

The primary source of CO₂ emissions from the Sevan Hummingbird FPSO was flaring (see Figure 4-9), for which Spirit Energy hold the Flare Consent. This is followed by diesel and fuel gas use. Combustion plant on the Sevan Hummingbird FPSO falls below the regulatory reporting thresholds and therefore there is no Pollution Prevention and Control (PPC) permit.

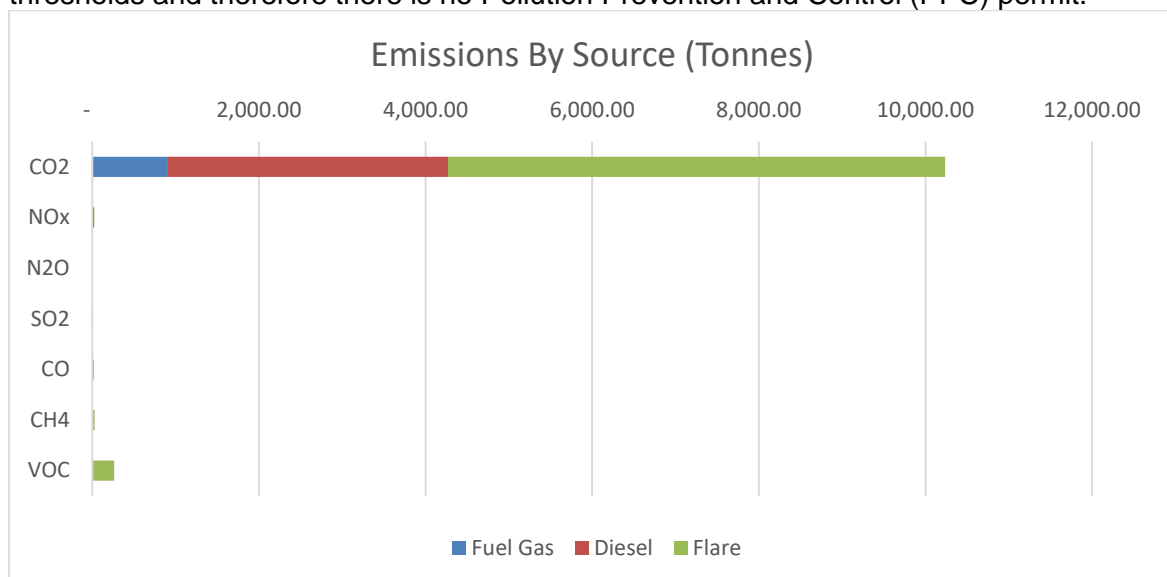


Figure 4-9 Sevan Hummingbird Emissions

4.2.4 Waste Management

The Sevan Hummingbird FPSO generated 65.16 tonnes of waste which was segregated into the following disposal routes (Figure 4-10).

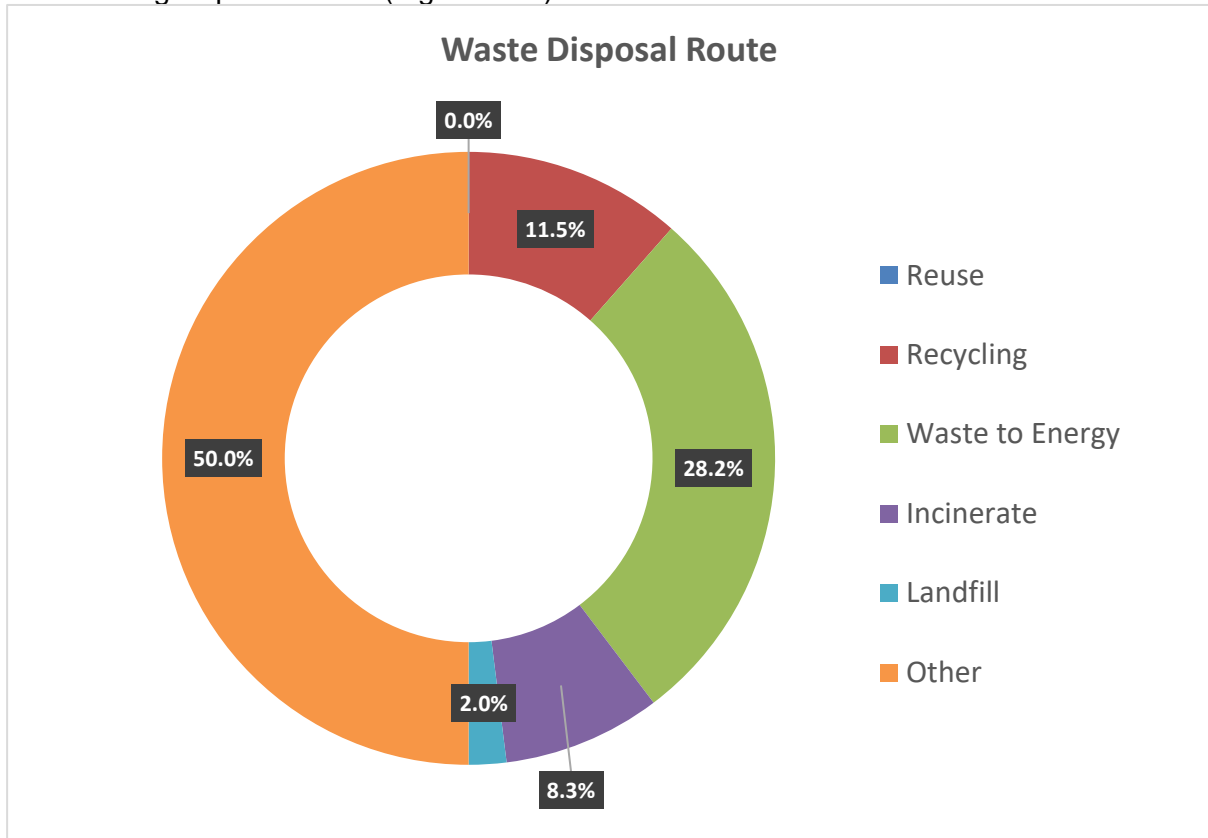


Figure 4-10 Sevan Hummingbird Waste Disposal Route Breakdown

5 INCIDENTS

The reportable incidents that occurred during 2022 are presented in Table 5-1. Most non-conformances are associated with breaching monthly or daily OIW limits on the Petrojarl Foinaven and Sevan Hummingbird assets.

Table 5-1 2021 Reportable Incidents

Date	Asset	Non-Conformance Type	Description
January 2022	<i>Hummingbird</i>	<i>OPPC Non-Conformance</i>	Monthly OiW >30 mg/L
January 2022	<i>Hummingbird</i>	<i>OCR Non-Conformance</i>	<i>Altera failed to address a couple of comments received from Marine Scotland 17th December 2021 which led to the chemical permit not being approved prior to operations running into 2022.</i>
April 2022	<i>Foinaven</i>	<i>PON 1</i>	<i>Chemical release of 400 g of biocide (Roemex chemical sticks)</i>
April 2022	<i>Hummingbird</i>	<i>PON1</i>	<i>DSV Boka Atlantis on hire to Spirit Energy. Loose fitting on hydraulic downline resulted in hydraulic fluid release.</i>
April 2022	<i>Foinaven</i>	<i>PON 1</i>	<i>Chemical release of biocide (Roemex chemical sticks) while the Normand Subsea was working at Foinaven DC1 Manifold M1.</i>
April 2022	<i>Hummingbird</i>	<i>OPPC Non-Conformance</i>	<i>Late submission of the 2022-03 EEMS return.</i>
May 2022	<i>Foinaven</i>	<i>OCR Non-Conformance</i>	<i>Estimated leakage volume of 2.55 litres of hydraulic fluid , while pressure testing.</i>

6 CONCLUSIONS

Alterra Infrastructure is committed to minimising impacts to the environment from offshore operations in 2022. Through the regular review of environmental performance, and the setting and delivery of environmental objectives that are appropriate to environmental risks, Alterra Infrastructure managed to deliver and exceptional environmental performance.

Both the Sevan Hummingbird and the Petrojarl Foinaven have now ceased production and as such this is the final Environmental Annual Report that will be issued.
